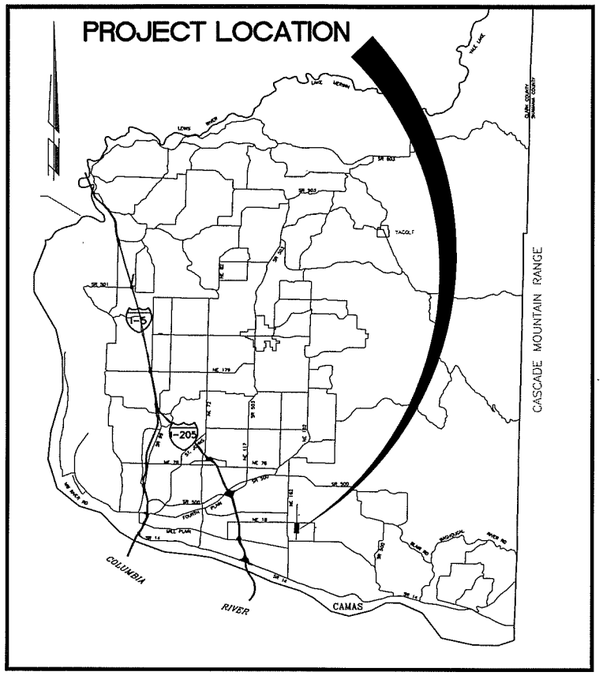
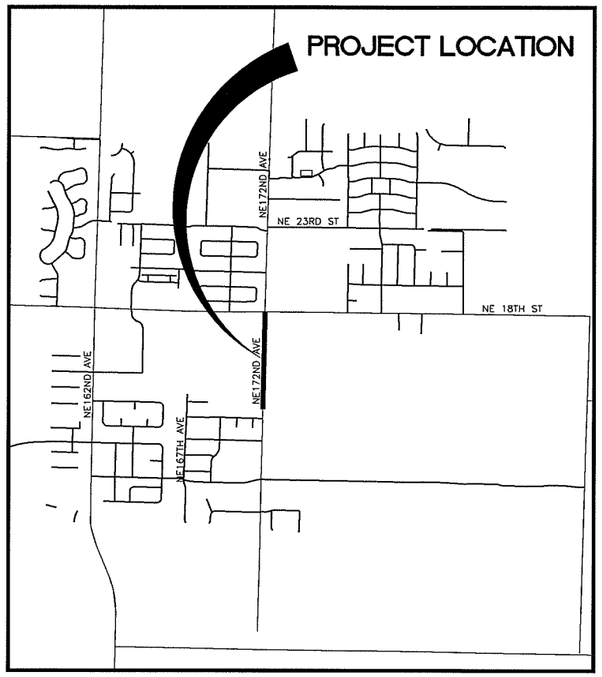
CAPITAL IMPROVEMENTS PROGRAM
COUNTY ROAD PROJECT # 331822

NE 172ND AVENUE

NE 12TH STREET TO NE 18TH STREET

PLANS FOR THE CONSTRUCTION OF
ROADWAYS AND STORM DRAINAGE





INDEX OF SHEETS

THOMAS D. GRANGE — STATE OF WASHINGTON — 32068 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: JANUARY 20, 2006

BRUCE A. RLLIG — STATE OF WASHINGTON — 39868 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

90% PLANS

COMMISSIONERS:

BETTY SUE MORRIS, Chair
JUDIE STANTON, Commissioner
CRAIG A. PRIDEMORE, Commissioner

CLARK COUNTY WASHINGTON — proud past, promising future

DEPARTMENT OF
PUBLIC WORKS

PRELIMINARY

Quality Assurance	*Project Manager*	*Public Works Director/ County Engineer*
Greg Shafer, P.E. DATE:	*Linda Small* DATE:	*Peter Capell, P.E.* DATE:

ENG #2003-XXXXX

CLARK COUNTY WASHINGTON — proud past, promising future

Recommended for Approval

Grading _____ Erosion _____

Storm Water Plan _____

_____
Development Review Manager — Date

DESIGN AND ENGINEERING DIVISION- DESIGN SECTION

N:\CIP\PROJECTS\331822-NE172nd\we\DESIGN\DWGS\172COV.dwg, 5/26/2004 7:22:51 AM, kerlinr

SUMMARY OF QUANTITIES

ITEM_NUM	QUANTITY	UNIT	DESCRIPTION
1	1	L.S.	MOBILIZATION
2	1	CALC.	MINOR CHANGE
3	5	HOUR	REPLACEMENT STAKING SERVICES
4	1200	HOUR	TRAFFIC CONTROL LABOR
5	400	HOUR	TRAFFIC CONTROL SUPERVISOR
6	1	L.S.	TEMPORARY TRAFFIC CONTROL DEVICES
7	400	S.F.	CONSTRUCTION SIGNS CLASS "A"
8	1	L.S.	CLEARING AND GRUBBING
9	1	EST.	ROADSIDE CLEANUP- FORCE ACCOUNT
10	1	L.S.	REMOVAL OF STRUCTURES AND OBSTRUCTION
11	900	C.Y.	ROADWAY EXCAVATION (INCL. HAUL)
12	1400	C.Y.	STORMWATER FACILITY EXCAVATION
13	100	L.F.	SAWCUT EXISTING (ASPHALT) PAVEMENT
14	350	MGAL	WATER
15	250	S.Y.	IMPERMEABLE LINER
16	1735	TON	CRUSHED SURFACING BASE COURSE
17	1050	TON	ASPHALT CONCRETE PAVEMENT CL. A
18	840	TON	ASPHALT CONCRETE PAVEMENT CL. E
19	130	S.Y.	CEMENT CONCRETE APPROACH, 3-DAY
20	1074	L.F.	TRENCH SAFETY SYSTEM
21	170	L.F.	PERFORATED UNDERDRAIN PIPE 12 IN. DIAM.
22	196	L.F.	STORM SEWER PIPE, 10 IN. DIAM.
23	708	L.F.	STORM SEWER PIPE, 12 IN. DIAM.
24	1	EACH	MANHOLE 48 IN. DIAM. TYPE 1
25	2	EACH	MANHOLE 48 IN. DIAM. TYPE 3
26	4	EACH	PRECAST CONCRETE DRYWELL
27	2	EACH	CONCRETE COMBINATION CURB INLET
28	8	EACH	CATCH BASIN
29	10	EACH	LOW PROFILE DEBRIS TRAP
30	1	L.S.	ENERGY DISSAPATOR (SWF#2)
31	2	EACH	ADJUST MANHOLE/ CATCH BASIN/ INLET/ DRYWELL METHOD 1
32	5	EACH	ADJUST WATER/GAS VALVE COVER, RIM, OR FRAME
33	2	EACH	RELOCATE WATER METER BOX AND SERVICE
34	1300	L.F.	SILT FENCE
35	1	EACH	STABILIZED CONSTRUCTION ENTRANCE
36	1	EACH	TIRE WASH
37	14	EACH	INLET PROTECTION
38	1	EACH	EROSION CONTROL REINSPECTION FEE
39	60	DAY	ESC LEAD
40	1	L.S.	SPILL PREVENTION PLAN
41	500	C.Y.	COMPOST AMENDED TOPSOIL
42	0.55	ACRE	SEEDING AND MULCHING
43	0.5	ACRE	STORMWATER FACILITY SEEDING AND MULCHING
44	1800	S.Y.	SOD INSTALLATION
45	1340	L.F.	CEMENT CONC. BARRIER CURB AND GUTTER
46	30	L.F.	FLOW SPREADER CURB
47	1400	L.F.	EXTRUDED CONCRETE CURB
48	1310	L.F.	3' VINYL COATED CHAIN LINK FENCE
49	1	EACH	24' GATE
50	345	L.F.	FENCE RELOCATION (INCL GATE)
51	1600	S.Y.	CEMENT CONCRETE SIDEWALK
52	40	L.F.	SCHEDULE 40 PVC CONDUIT, 3 IN. DIAM
53	4	EACH	DETECTABLE WARNING PATTERN
54	2	EACH	REMOVALBE BOLLARD
55	1	L.S.	UTILITY ADJUSTMENTS

LEGEND

- ROW LINE
- NEW EDGE OF PAVEMENT
- NEW CURB LINE
- NEW CENTER LINE
- NEW FENCE LINE
- NEW STORM DRAIN OR CULVERT
- NEW FILL LIMITS
- NEW CUT LIMITS
- SAWCUT LINE
- PERMANENT SLOPE EASEMENT
- NEW SILT FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING CURB LINE
- EXISTING CENTER LINE
- EXISTING FENCE LINE
- EXISTING TELEPHONE LINE
- EXISTING WATER LINE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING SANITARY SEWER LINE
- EXISTING STORM DRAINAGE
- EXISTING GAS LINE
- EXISTING CULVERT
- EXISTING DITCH CENTER LINE
- EXISTING GUARDRAIL

SYMBOLS

- NEW CATCH BASIN (CB)
- NEW MANHOLE (MH)
- NEW CURB INLET (CI)
- NEW COMBINATION CURB INLET (CCI)
- NEW MAIL BOX
- NEW HANDICAP RAMP
- CURVE TABLE
- EXISTING TRANSFORMER
- EXISTING ELEC TOWER
- EXISTING SANITARY SEWER MH
- EXISTING FIRE HYDRANT
- EXISTING CLEAN OUT
- EXISTING GAS VALVE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING SIGNAL POLE
- EXISTING TELEPHONE VAULT
- EXISTING TELEVISION BOX
- EXISTING WELL
- EXISTING BRUSH LINE
- EXISTING HEDGE
- EXISTING CURB INLET (CI)
- EXISTING CATCH BASIN (CB)
- EXISTING STORM MH
- EXISTING MISC MH
- EXISTING SHRUB
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- EXISTING SIGN
- EXISTING DECIDUOUS TREE
- EXISTING J BOX
- EXISTING TELEPHONE MANHOLE
- EXISTING TELEPHONE POLE
- EXISTING LIGHT
- EXISTING GUY ANCHOR
- EXISTING POWER POLE
- EXISTING MAIL BOX
- EXISTING TELEPHONE PEDESTAL
- EXISTING SPRINKLER HEAD
- TRAVERSE POINT
- TEST HOLE

PRELIMINARY

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
DWG:	S01
SHEET X	OF X

CALL 48 HOURS BEFORE YOU DIG 1-800-553-4344 "It's the Law" NORTHWEST UTILITIES NOTIFICATION CENTER

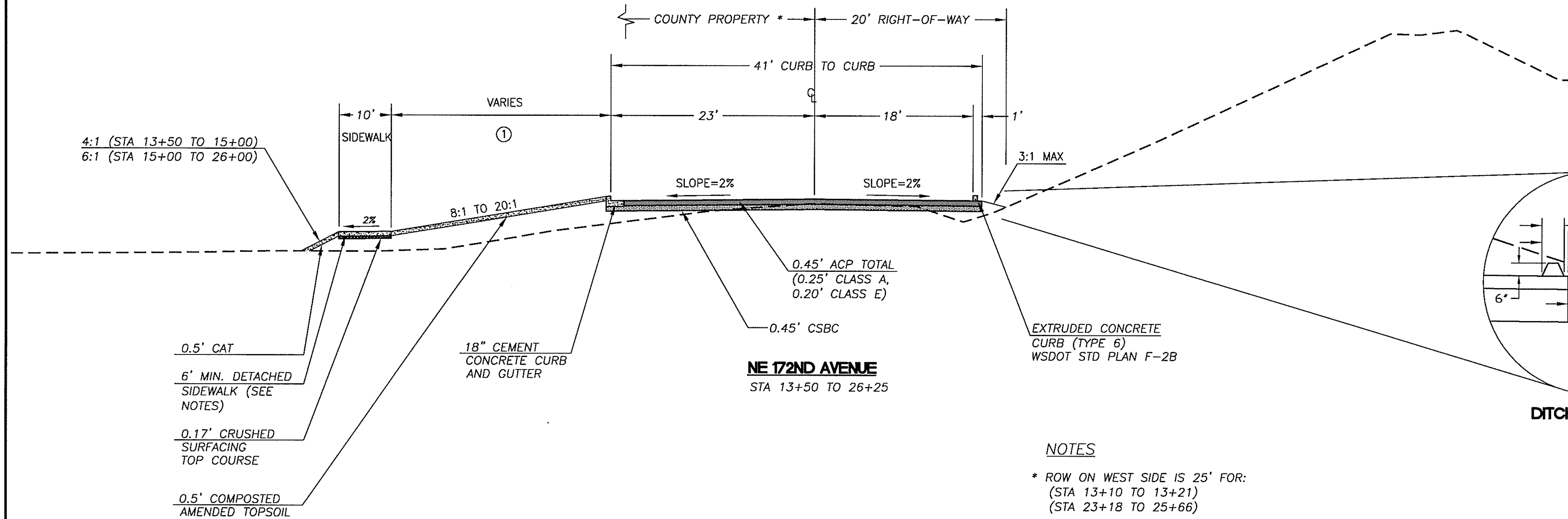
STATE OF WASHINGTON CHARLES A. KILLEY 30888 REGISTERED PROFESSIONAL ENGINEER EXPIRES APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

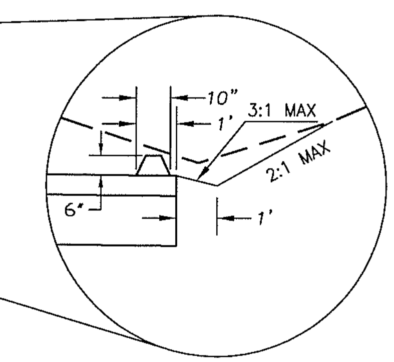
NE 172ND AVENUE
SUMMARY OF QUANTITIES AND LEGEND

CLARK COUNTY WASHINGTON
proud past, promising future

PRELIMINARY



NE 172ND AVENUE
STA 13+50 TO 26+25

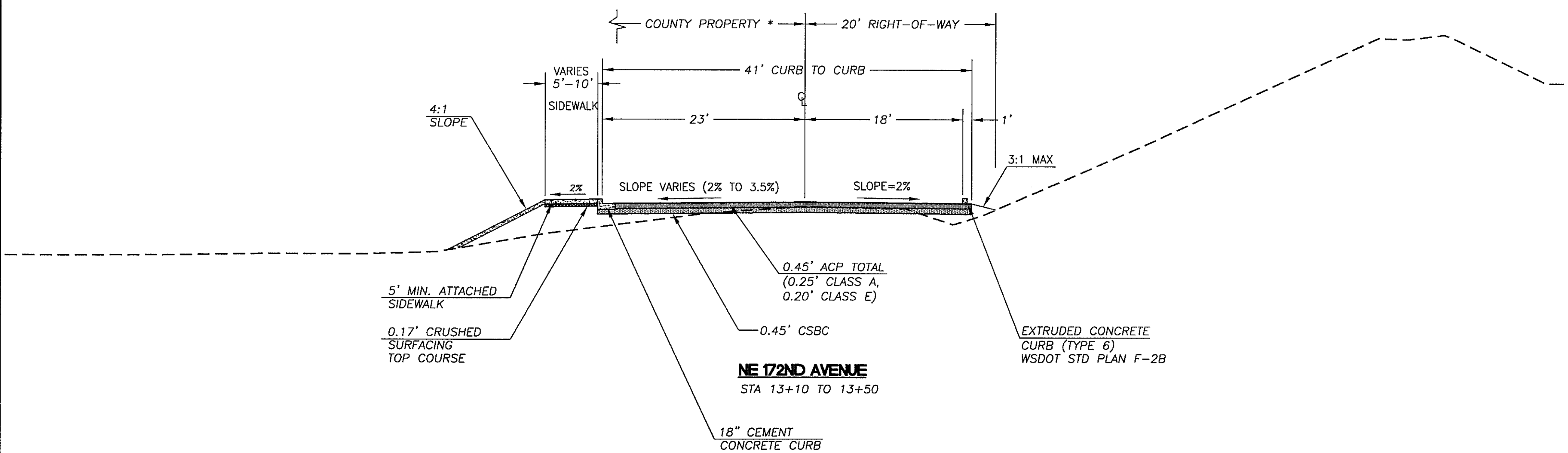


DITCH SECTION

NOTES

* ROW ON WEST SIDE IS 25' FOR:
(STA 13+10 TO 13+21)
(STA 23+18 TO 25+66)

① VARIES. SEE PLAN/PROFILE SHEETS FOR SIDEWALK LOCATIONS



NE 172ND AVENUE
STA 13+10 TO 13+50

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
DWG:	TS1
SHEET X	OF X

CALL 48 HOURS BEFORE YOU DIG
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NORTHWEST UTILITIES NOTIFICATION CENTER

BRUCE A. KLUG
STATE OF WASHINGTON
39888
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
TYPICAL SECTIONS

CLARK COUNTY
WASHINGTON
proud past, promising future

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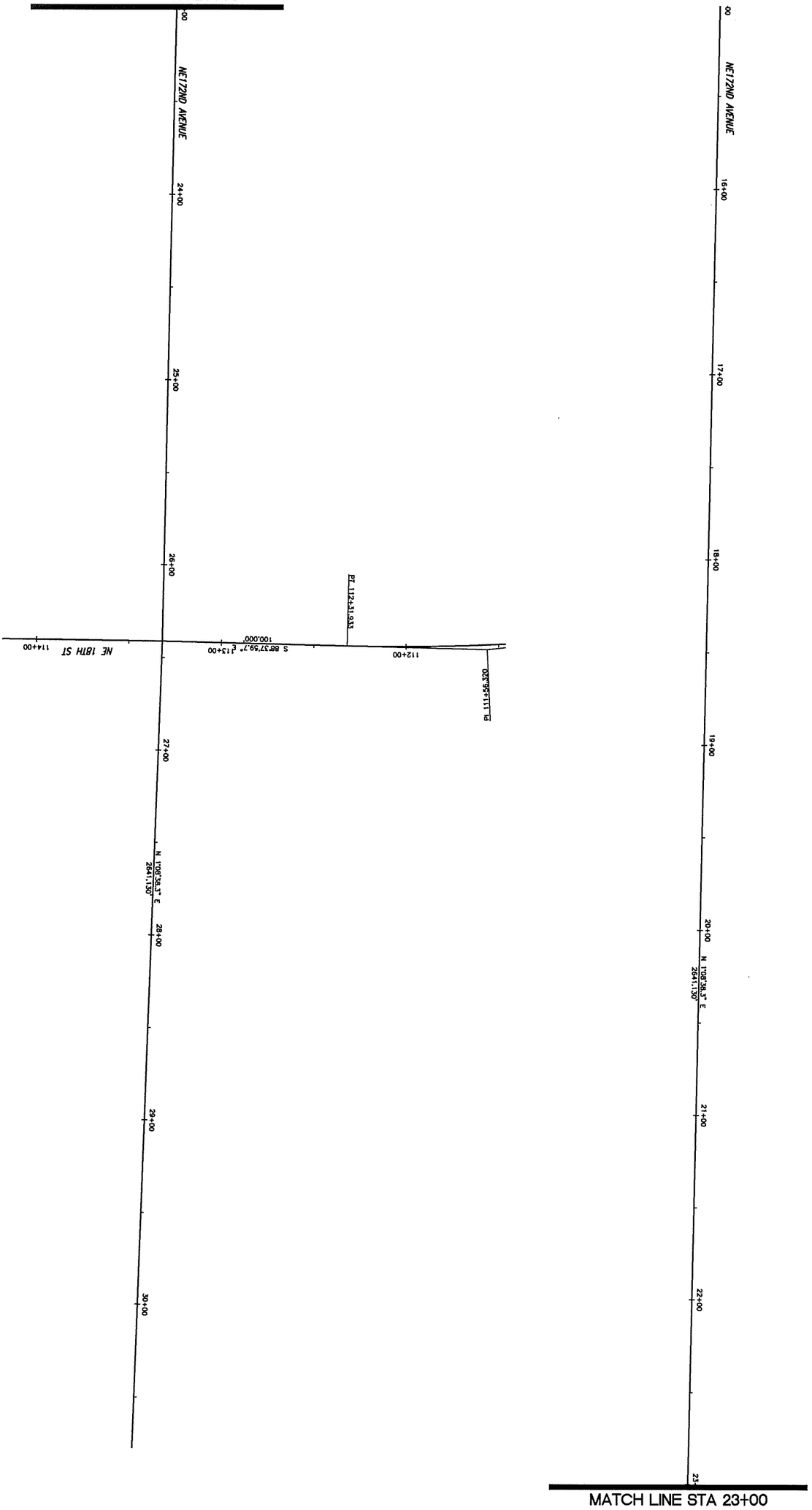

PRELIMINARY

SCALE IN FEET
30 0 30 60

CLARK COUNTY
WASHINGTON
proud past, promising future

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
HORIZONTAL AND VERTICAL CONTROL

BRUCE A. HUIE
STATE OF WASHINGTON
37868
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2005

CALL 48 HOURS BEFORE YOU DIG
1-800-553-4344
"It's the Law"
NORTHWEST UTILITIES NOTIFICATION CENTER

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	1"=100'
VERT.	NA
DATE	5/26/04
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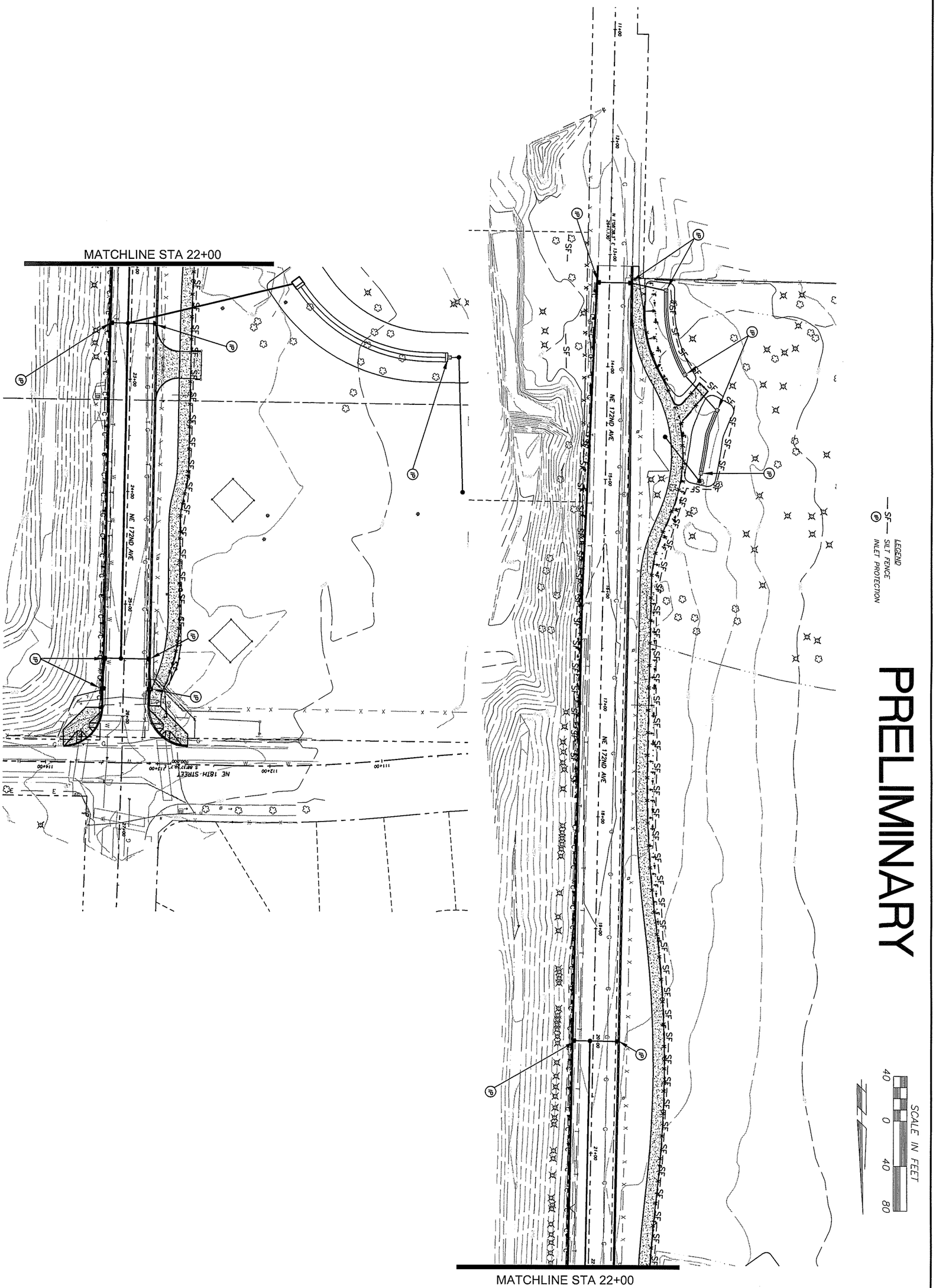

CLARK COUNTY
WASHINGTON
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DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
EROSION CONTROL PLAN

BRUCE A. HOUK
STATE OF WASHINGTON
19868
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

CALL 48 HOURS BEFORE YOU DIG
1-800-553-4344
"It's the Law"
NORTHWEST UTILITIES NOTIFICATION CENTER

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	1"=40'
VERT.	NA
DATE	5/26/04
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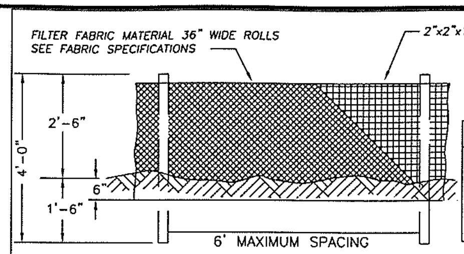
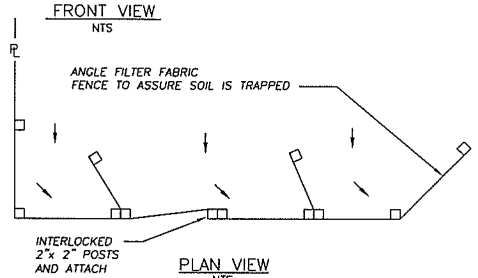


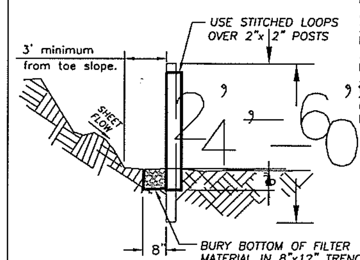
FRONT VIEW
NTS

SEDIMENT FENCE FABRIC SPECIFICATIONS
(Woven Polyproylene sediment fence fabric)

PROPERTY	TEST PROCEDURE	MIN. FABRIC VALUE
Grab Tensile Strength	ASTM D-4632	180 lbs.
Grab elongation	ASTM D-4632	15%
trapezoid Tear	ASTM D-4533	70 lbs.
Mullen Burst	ASTM D-3786	300 psi.
Puncture	ASTM D-4833	80 lbs.
Permitivity	ASTM D-4491	0.07 sec-1
Permeability	ASTM D-4491	.005 cm/sec
A.O.S.	ASTM D-4751	50 U.S. Sieve
UV Resistance(500 hrs)	ASTM D-4355	90%



PLAN VIEW
NTS



PROFILE
NTS

NOTES
1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS, IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED. (SEE FABRIC SPECIFICATIONS ABOVE)
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. POST ARE TO BE 2"x2" FIR, PINE OR STEEL FENCE POSTS.
4. POST TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. SEDIMENT FENCE TO BE SPACED ON SLOPES PER TABLE BELOW.

INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS

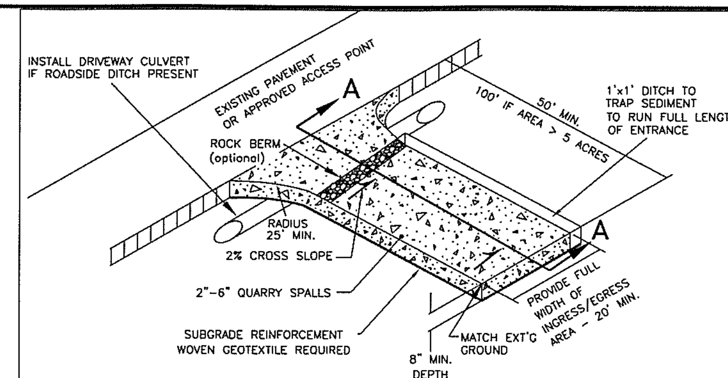
% SLOPE	SLOPE	MAX. SPACING ON SLOPE
10% FLATTER	10:1 OR FLATTER	300 ft.
10>%<15	10:1>x<7.5:1	150 ft.
15>%<20	7.5:1>x<5:1	100 ft.
20>%<30	5:1>x<3.5:1	50 ft.
30>%<50	3.5:1>x<2:1	25 ft.

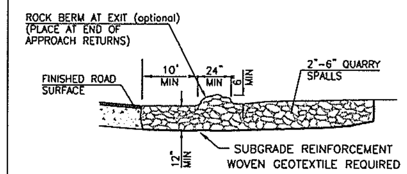
NO.	REVISIONS	DATE	BY

DWG: E-4.DWG

Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

STANDARD SEDIMENT FENCE
APPROVED
Peter Capell
COUNTY ENGINEER
01/01/04
DATE
STANDARD E-4
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03





1. EXCAVATE MINIMUM OF 12" OF EXISTING SOILS.
2. PLACE MINIMUM OF 12" OF 2"-6" QUARRY SPALLS
3. CONSTRUCT ROCK BERM ALONG TRANSITION POINT TO FINISH ROAD SURFACES, DIVERT RUNOFF TO ONSITE AREA (OPTIONAL).

SECTION A-A

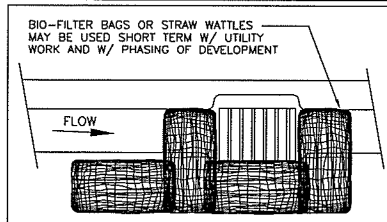
NOTES:
1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES. NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
3. VEHICLE WASHDOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
4. WASHDOWN AREA TO BE MADE UP OF CLEAN 2"- 6" QUARRY SPALLS, 1" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASHDOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASHDOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.

NO.	REVISIONS	DATE	BY

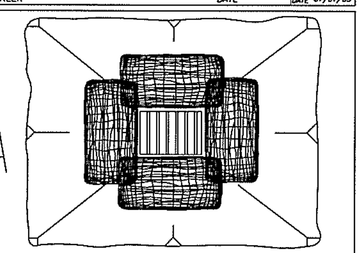
DWG: E-1.DWG

Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

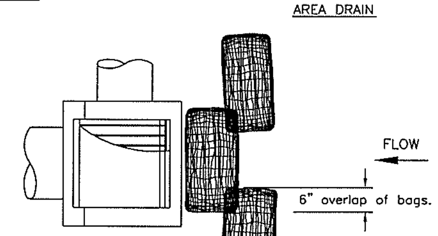
STANDARD CONSTRUCTION ENTRANCE
APPROVED
Peter Capell
COUNTY ENGINEER
01/01/04
DATE
STANDARD E-1
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03



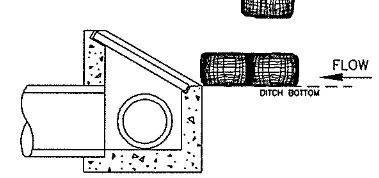
CATCH BASIN



AREA DRAIN



PLAN VIEW



DITCH INLET

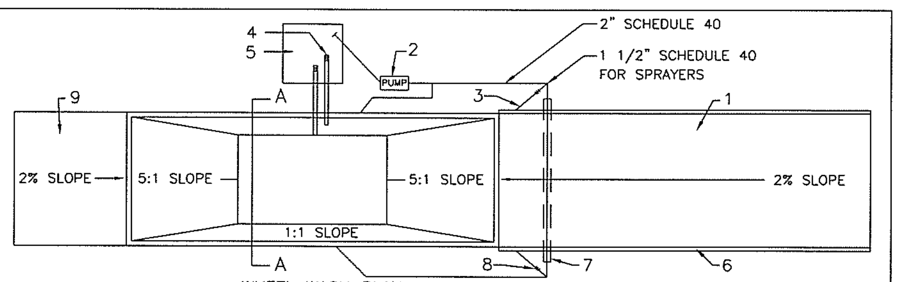
NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURES SPECIFICATIONS.
4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
5. SEE INLET PROTECTION NOTES STD. PLAN E-3

NO.	REVISIONS	DATE	BY

DWG: E-3c.DWG

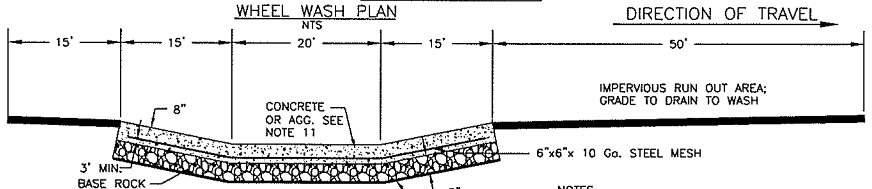
Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

INLET PROTECTION TYPE 4
BIOFILTER BAGS
APPROVED
Peter Capell
COUNTY ENGINEER
01/01/04
DATE
STANDARD E-3c
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/07/02

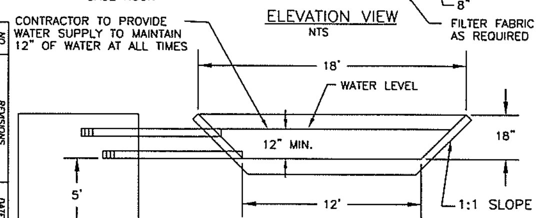


WHEEL WASH PLAN
NTS

DIRECTION OF TRAVEL



ELEVATION VIEW
NTS



SECTION A-A
NTS

NOTES
1. ASPHALT CONSTRUCTION ENTRANCE, 6" OF ATB.
2. 3" TRASH PUMP WITH FLOATS ON SUCTION HOSE.
3. MIDPOINT SPRAY NOZZLES, IF NEEDED.
4. 6" SEWER PIPE WITH BUTTERFLY VALVES. BOTTOM PIPE IS A DRAIN. LOCATE TOP PIPE'S INVERT 1' ABOVE BOTTOM OF WHEEL WASH.
5. 8'x 8' SUMP WITH 5' OF CATCHMENT. BUILD WITH ABILITY TO CLEAN WITH BACKHOE.
6. ASPHALT CURB ON THE LOW ROAD SIDE TO DIRECT WATER BACK TO POND.
7. 6" SLEEVE UNDER ROAD.
8. BALL VALVES.
9. ATB APRON TO PROTECT FROM SPLASHING WATER.
10. CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT FROM WHEEL WASH; MAY BE PIPED TO AN APPROVED SEDIMENT TRAP.
11. USE GEOTEXTILE FABRIC WITH AGGREGATE FOR A TEMPORARY WHEEL WASH.

NO.	REVISIONS	DATE	BY

DWG: E-15

Department of Public Works
CLARK COUNTY
WASHINGTON
proud past, promising future

WHEEL WASH
APPROVED
Peter Capell
COUNTY ENGINEER
01/01/04
DATE
STANDARD E-15
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 08/12/02

PRELIMINARY

STANDARD NOTES FOR EROSION CONTROL PLAN

1. The Contractor shall install and maintain BMP's as shown and perform all actions necessary to prevent erosion, and control sediment from leaving the construction site. Site Contractor shall comply with Clark County Code Chapter 13 .29, Article IV.

2. All erosion control measures shall be in-place and in working condition prior to disturbing and exposing any soil surfaces (i.e. silt fence, construction entrance, sedimentation barriers, sedimentation traps).

3. All erosion prevention and control BMP's shall be maintained and repaired as needed to insure continued performance of their intended function. Needed repairs shall be made as soon as practicable. They are to remain in place and operational during all phases of construction. Construction activities shall not continue or resume until repairs to erosion control facilities are made and the facilities are functional. Any sediment leaving the site or discharging to a sensitive area shall be stopped and controlled immediately. Contaminated areas shall be cleaned and restored.

4. Clearing limits and work area limits shall be delineated and marked. Do not disturb more area than needed for construction requirements.

5. All sensitive or critical areas (wetlands, steep slopes, natural waterways), and buffers shall all be clearly delineated and clearly marked, and protected from sediment deposition.

6. Sediment laden runoff shall be prevented from entering all existing storm water catch basins and inlets affected by construction.

7. No exposed, bare soils shall remain unstabilized for more than two days during the period October 1 thru April 30 or for more than seven days during the period of May 1 through September 30. All disturbed soil surfaces shall be stabilized by a suitable application of "Best Management Practices".

8. Where feasible, no more than 500 feet of trench shall be open at one time. Excavated material shall be placed on the up-hill side of trenches provided it does not conflict with safety requirements.

9. Dewatering devices shall discharge into a sediment trap or sediment pond. No discharge shall be made to a paved street or stormwater collection system without first removing sediment.

10. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Erosion shall be controlled and prevented by such measures as roughening the surface, installation of interceptor ditches, terracing, covering with matting, mulch or plastic sheeting. Runoff shall be prevented from entering a slope and from undercutting the base of slopes.

11. Any soil or debris transported onto roadways and sidewalks shall be removed. Deposits shall be completely removed by shoveling and/or sweeping. Washing shall not be utilized unless specifically approved in writing by the County.

12. All permanent infiltration systems shall be isolated and protected from sediment laden runoff entering to avoid risk of reducing the ability of the systems to infiltrate. Isolation and protection shall not be removed until the drainage area tributary to the system is completely stabilized.

13. All conveyance channels, both temporary and permanent shall be stabilized to prevent erosion of the channel. Stabilization shall extend to areas at outlets and downstream reaches vulnerable to erosion resulting from flow discharging from the channel.

14. If BMP's shown are utilized but are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights-of-way; additional BMP's shall be implemented immediately to prevent further encroachment of sediment.

15. Stabilized areas shall be provided for employee parking and storage of construction materials. Erodeable stockpiles of earthen materials, such as topsoil, silty and clayey soils; and landscape materials, shall be covered when not being incorporated in the work. Erosion control BMP's shall be utilized as necessary to prevent sediment laden runoff from leaving or sediment being transported from these areas from vehicle activity.

16. All pollutants other than sediment that occur during construction shall be handled and disposed of in a manner that does not cause contamination of storm water.

17. The Contractor shall keep an inspection log of the condition of the erosion control facilities. Erosion control facilities shall be inspected at least weekly and after each rainfall. The inspection log shall be kept at the project site at a designated location and shall be available for review by the County. An individual that has successfully completed the County's Erosion Control Certification course shall perform inspections and maintain the

18. All temporary BMP's shall be removed within 30 days after final site stabilization is achieved. Trapped sediment shall be deposited and stabilized on site. Areas disturbed resulting from removal shall be permanently stabilized.

19. Construction shall not be considered complete and acceptable until all disturbed soil surfaces have been protected from erosion with permanent landscaping, covering with impervious surfaces, restored to original undisturbed condition or permanently stabilized.

20. Vegetated stabilization and landscaping shall be fertilized, watered and maintained to insure that growth of vegetation is established and sustained.

21. During dry weather construction periods the contractor shall provide project-specific dust control measures that may include: Seeding, Mulching, Matting, Water, Tackifier, or Chemical Soil Stabilizers. The contractor shall maintain the dust control measures through dry weather periods until all disturbed areas have been stabilized. Immediately re-stabilize areas disturbed by contractor's operations or other activities (wind, water, vandalism, etc.).

NOTE:
SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT IS DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

Notes:
1. Asphalt construction entrance 6 in. asphalt treated base (ATB).
2. 3-inch trash pump with floats on the suction hose.
3. Midpoint spray nozzles, if needed.
4. 6-inch sewer pipe with butterfly valves. Bottom one is a drain. Locate top pipe's invert 1 foot above bottom of wheel wash.
5. 8 foot x 8 foot sump with 5 feet of catch. Build so can be cleaned with trackhoe.
6. Asphalt curb on the low road side to direct water back to pond.
7. 6-inch sleeve under road.
8. Ball valves.
9. 15 foot. ATB apron to protect ground from splashing water.

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
DWG:	EC2
SHEET X	OF X

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STATE OF WASHINGTON
BRUCE A. KLUG
39868
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
EROSION CONTROL DETAILS

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PRELIMINARY

SCALE IN FEET
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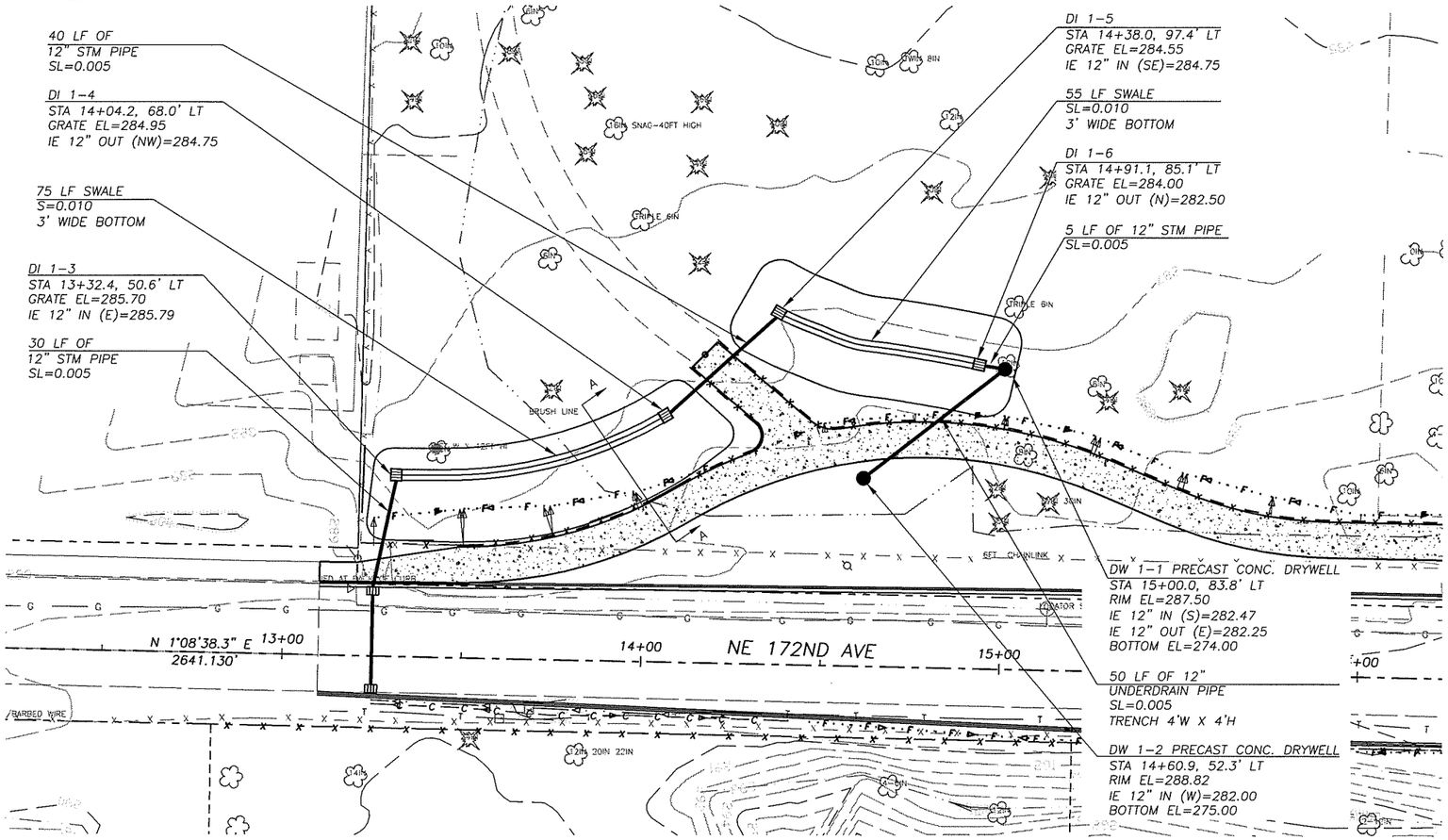
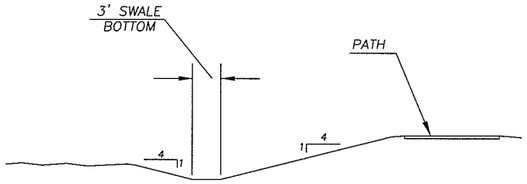
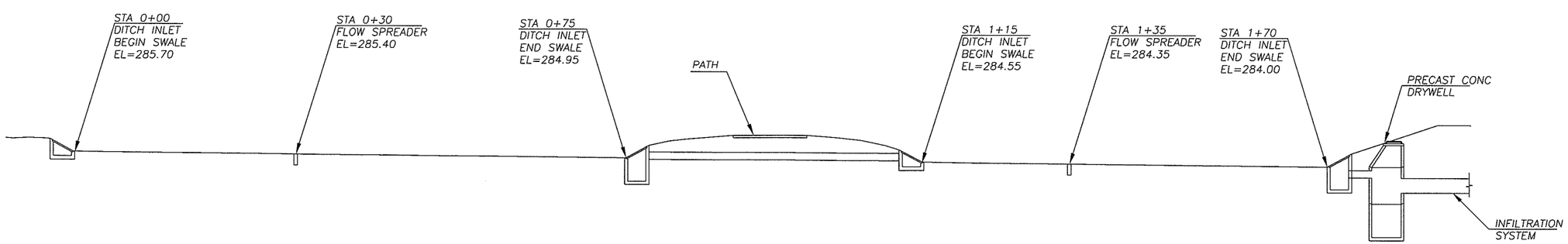




SECTION A
NTS



DESIGNED	TG
DRAWN	RK
CRP	331822
HOR.	1"=20'
VERT.	NA
DATE	5/26/04
DWG:	SWF1
SHEET	OF

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NE 172ND AVENUE
STORMWATER FACILITY #1

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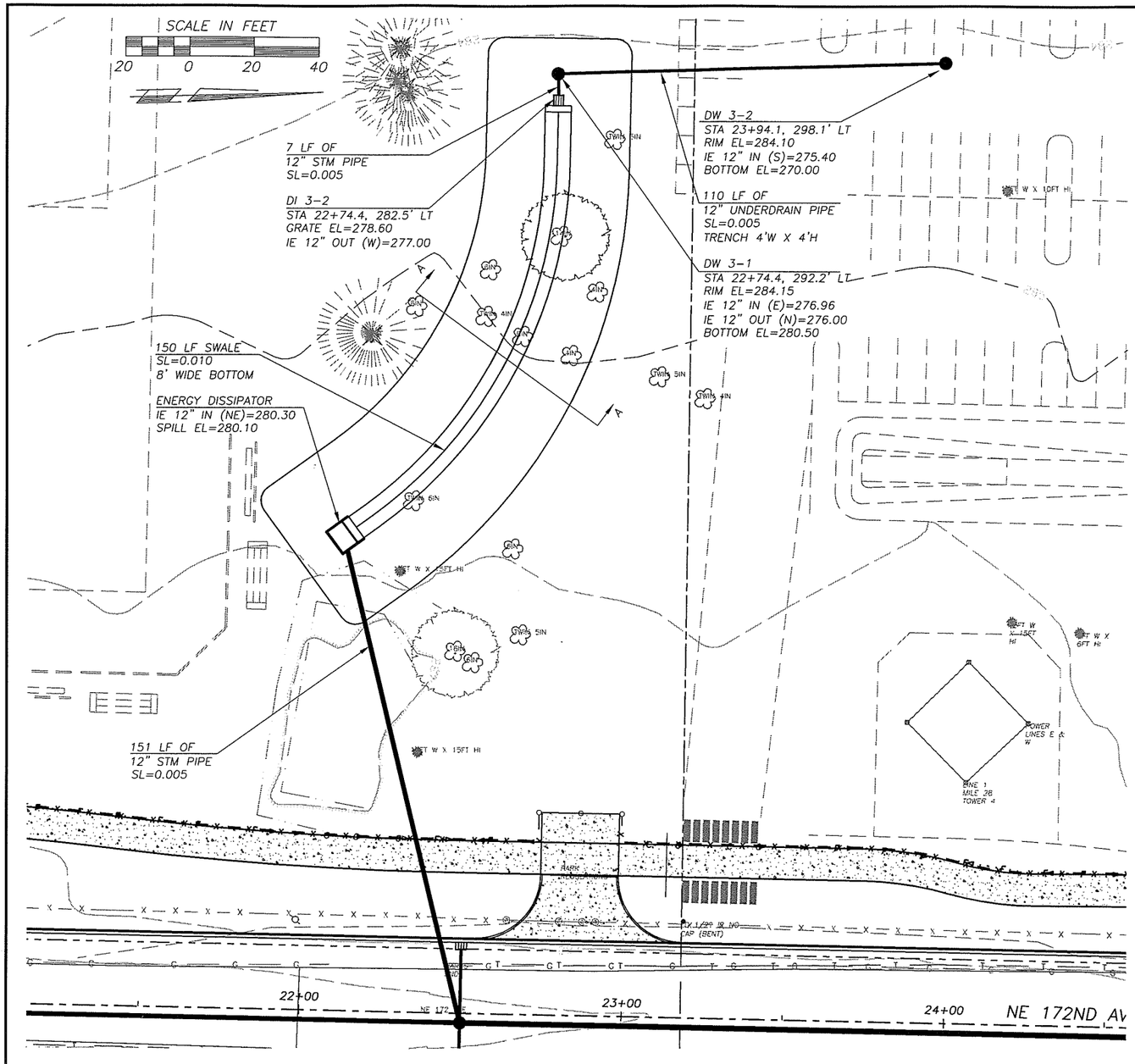
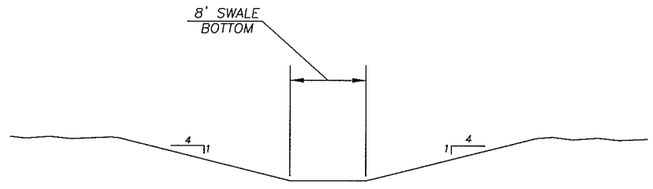
PRELIMINARY





SECTION A
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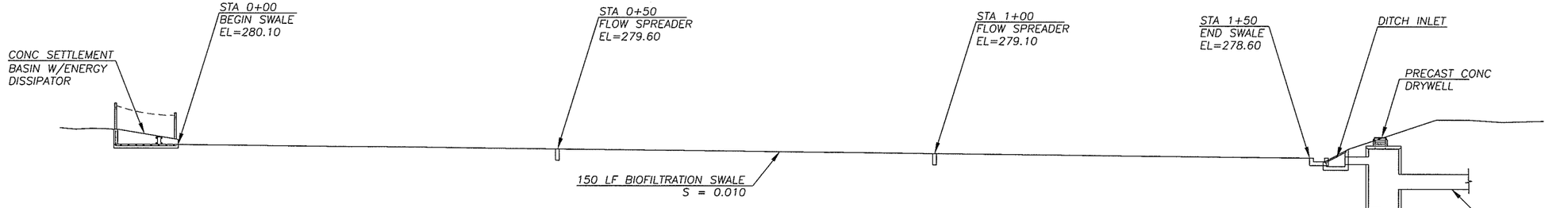

BIOFILTRATION SWALE PROFILE
NTS

DESIGNED TG
DRAWN RK
CRP 331822
HOR. 1"=20'
VERT. NA
DATE 5/26/04
DWG: SWF2
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DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
STORMWATER FACILITY #2

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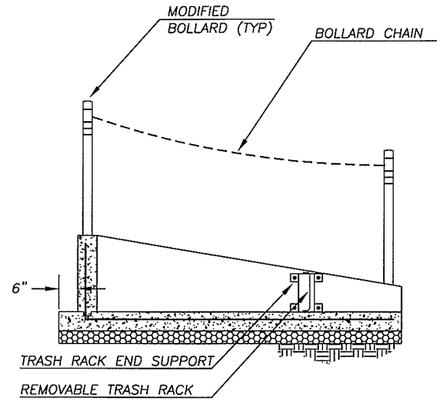

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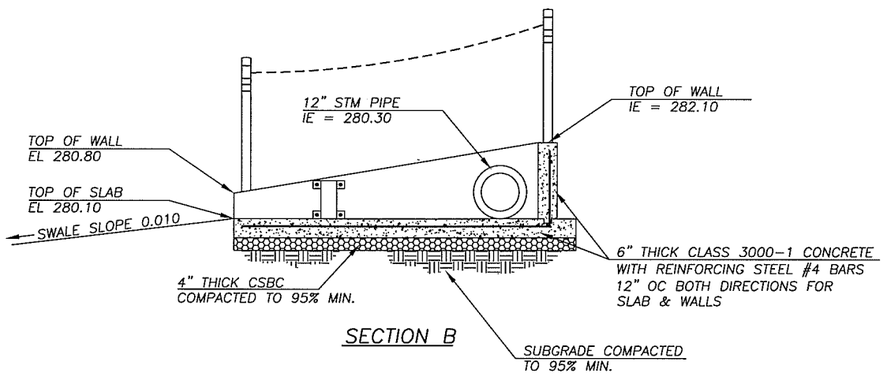

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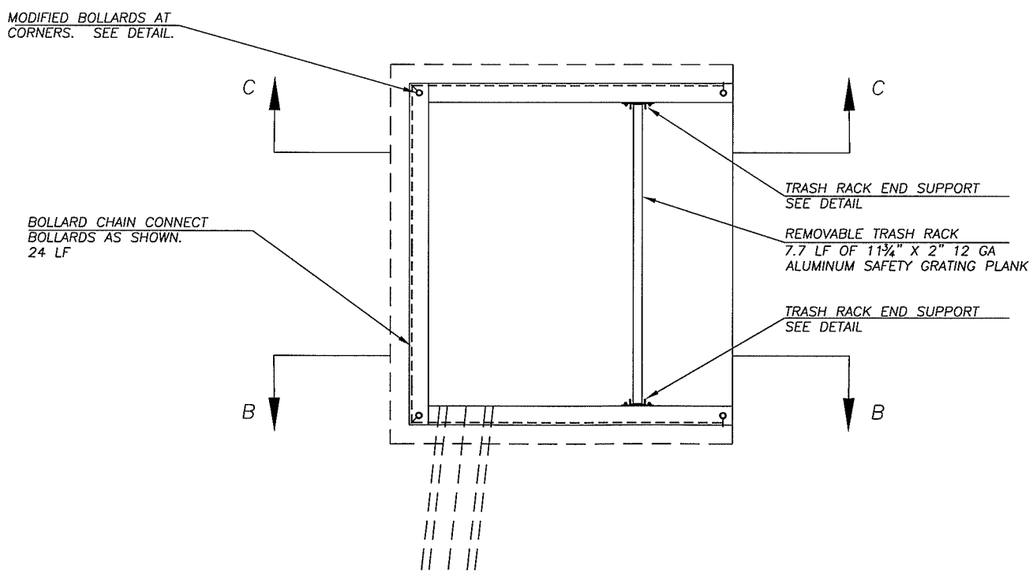
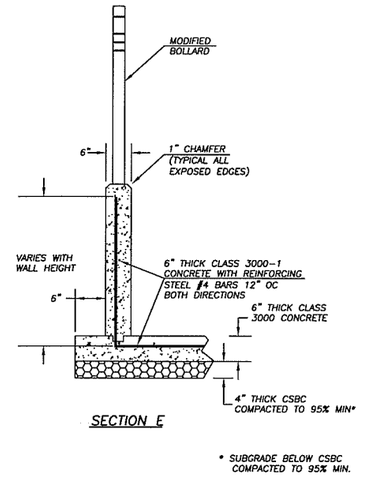
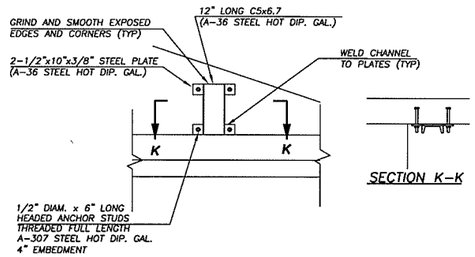




SECTION E

* SUBGRADE BELOW CSBC COMPACTED TO 95% MIN.



TRASH RACK END SUPPORT
1"=1'

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CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
DWG:	SWF3
SHEET	OF

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NE 172ND AVENUE
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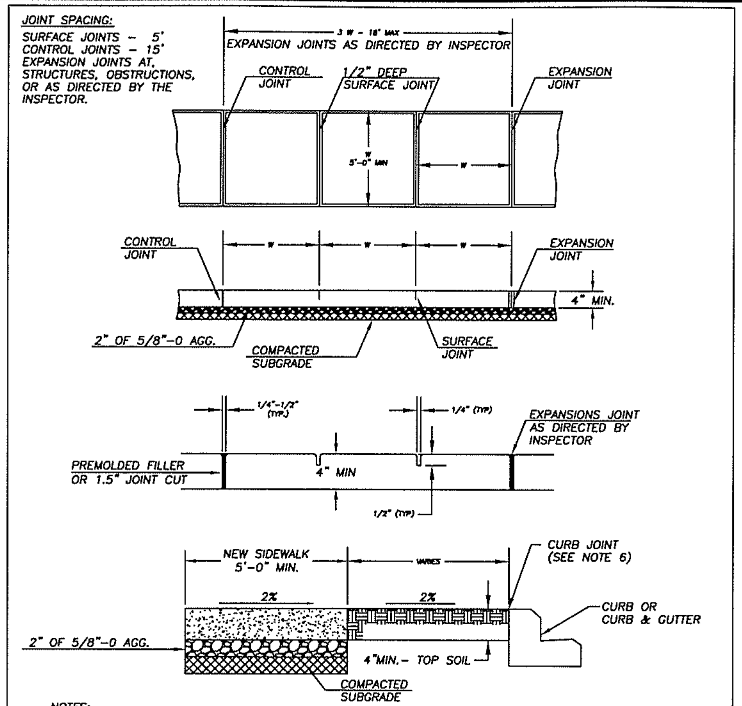

NOTES:

1. CONCRETE SHALL BE 3,000 PSI MIN. (CLASS 3000), 3 1/2" SLUMP (± 1")
2. FINISH SHALL BE MEDIUM BROOM PERPENDICULAR TO PEDESTRIAN TRAFFIC UNLESS OTHERWISE DIRECTED.
3. ALL EXISTING EDGES SHALL BE SAWCUT.
4. NO FILLER REQUIRED FOR SURFACE JOINTS.
5. ALL JOINTS AND EDGES SHALL BE FINISHED WITH 1/4" RADIUS EDGER (3" SMOOTH EACH SIDE)
6. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS.

NO.	REVISIONS	DATE	BY
1	CHANGE SUBGRADE &	03/28/02	KB
2	+ 2" BASE AGG. & NOTES	10/07/02	SCH

DWG: F12.dwg

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SIDEWALK DETAIL
APPROVED
COUNTY ENGINEER — DATE /04

STANDARD F12 PLAN No.
DESIGNED DB · DRAWN KB · DATE 10/08/02

OPEN CUT UTILITY TRENCH BACKFILL DETAIL (COLLECTOR OR ARTERIAL)

SURFACING:

1. All A.C.P. shall be saw cut to provide a straight, clean edge prior to paving.
2. The cut line shall be one continuous straight line from the outer excavation limits of manhole, valve box, etc. to manhole, valve box, etc.
3. Pave with an 0.5 ft. minimum compacted depth A.C.P., or match existing or design section, whichever is greater.
4. Lifts for A.C.P. (Class A) shall be 0.15 ft. minimum and 0.35 ft. maximum for non-surface lifts (0.25' maximum for surface lift); the temperature shall be 250 degree minimum, 350 degree maximum, compacted to 92% of the theoretical maximum.
5. All joints shall be tacked, sealed and sanded.
6. Trench shall be plated until paved.
7. For longitudinal installation, full lane width including turn lanes restoration shall be required or as directed by Clark County. For transverse installation refer to surfacing restoration of detail U6. See Section 12.20A.120.C.

BASE COURSE:

1. 0.80 ft. minimum depth (1-1/4" minus) C.S.B.C. (W.S.D.O.T. approved material).
2. Compacted to 95% of maximum density. See trench zone.
3. Equivalent depth of A.T.B. may be substituted.
4. For transverse or diagonal trenches in existing roadway pavement, CDF will be used from the bottom of full pavement section to a maximum CDF section of 3 feet or to 6" above the top of the pipe, which ever is less. See note 13 of Std. Plan UGN of this Manual.

TRENCH ZONE:

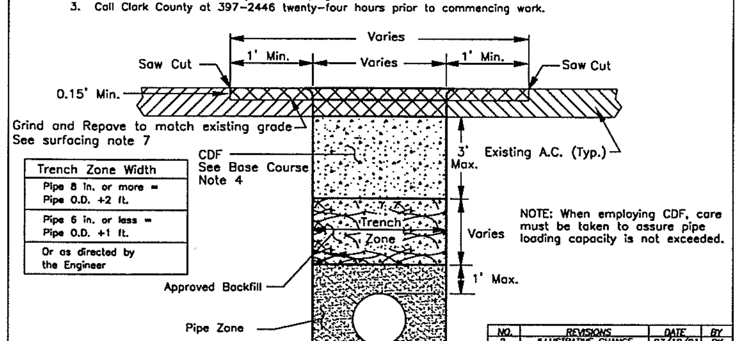
1. Granular backfill as approved by local agency or W.S.D.O.T. specifications for granular backfill. Compacted to 95% of maximum density in the trench zone using Method C compaction as per Section 2-03.3(14)C.
2. Native material may be used if approved prior to construction by Clark County.
3. Trench zone width -- see below.

PIPE ZONE:

1. Pipe zone material as specified by utility owner, and shall conform to section 9-03.12(3) WSDOT Specs.
2. 1.0 ft. max. from top of the pipe. 6" from top of pipe when CDF backfill used.

CONDITIONS:

1. A copy of the permit and requirements shall be on the job site at all times.
2. The permit holder shall be responsible for all restoration and maintenance of ditches, shoulders, driveways, landscaping, etc.
3. Call Clark County at 397-2446 twenty-four hours prior to commencing work.



Trench Zone Width
Pipe 8 In. or more = Pipe O.D. +2 ft.
Pipe 6 in. or less = Pipe O.D. +1 ft.
Or as directed by the Engineer

NO.	REVISIONS	DATE	BY
2	ILLUSTRATIVE CHANGE	07/10/01	BK
3	Notes: 6 Del., Rev. 7	12/07/02	SCH

DWG: U1.DWG

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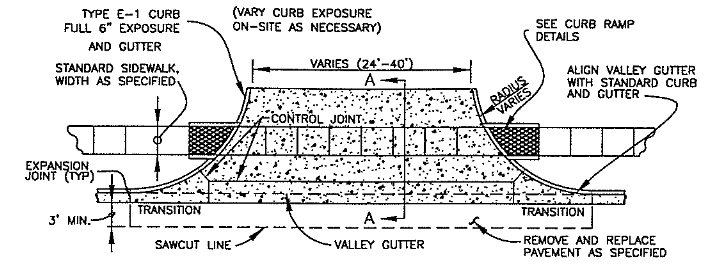
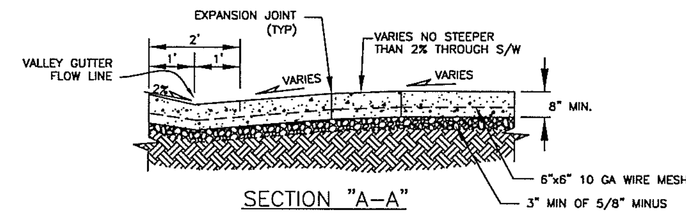
OPEN CUT UTILITY TRENCH BACKFILL DETAIL COLLECTOR OR ARTERIAL ROADWAY
APPROVED
COUNTY ENGINEER — 7/20/01 DATE

STANDARD U1 PLAN No.
DESIGNED · DRAWN · DATE 04/25/03



PLAN VIEW
COMMERCIAL DRIVEWAY ENTRANCE



SECTION "A–A"

NOTES:

1. CONCRETE SHALL BE 3300 PSI (MIN. BREAKING STRENGTH @ 28 DAYS) WITH 3" SLUMP (±1"). TOTAL AIR CONTENT (% BY VOLUME OF CONCRETE) SHALL NOT BE LESS THAN 4% OR MORE THAN 7%. MEDIUM BROOM FINISH PARALLEL TO DRIVEWAY CENTERLINE.
2. ALL JOINTS SHALL BE FINISHED WITH 1/4" RADIUS EDGE UNLESS OTHERWISE NOTED.
3. DRIVEWAYS EXCEEDING 15' IN TOTAL WIDTH SHALL HAVE ADDITIONAL LONGITUDINAL JOINTS AS DIRECTED. CONTROL JOINT SPACING SHALL NOT EXCEED 15'.
4. DRIVEWAY SHALL BE CONSTRUCTED WITH REINFORCING STEEL (6x6 10 GA WIRE MESH), MIN. 3" COVER.
5. ALL EXISTING EDGES SHALL BE SAW CUT.
6. 3" DEPTH 5/8"-0 CRUSHED AGGREGATE BASE COMPACTED TO 95% OF MAX. DRY DENSITY.
7. SUBGRADE PREPARATION PER WSDOT STD. SPEC. 2-06.3(1).
8. EXISTING CURB SHALL BE REMOVED TO EXISTING JOINT OR SAWCUT SUCH THAT 3' MIN. OF NEW STREET SECTION IS CONSTRUCTED ADJACENT TO NEW DRIVEWAY.
9. MAXIMUM 2% CROSS SLOPE ACROSS PEDESTRIAN CROSSING.
10. CURB RADIUS PER TABLES 40.350.030-2 THRU 6, OR AS APPROVED BY COUNTY ENGINEER.

NO.	REVISIONS	DATE	BY

DWG: F17.DWG

Department of Public Works
CLARK COUNTY WASHINGTON
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MAJOR COMMERCIAL CONCRETE APPROACH
APPROVED
COUNTY ENGINEER — 01/01/04 DATE

F17
DESIGNED SCH · DRAWN SCH · DATE 07/18/03

ROADWAY SHOULDER INCLUDES LAWN AND LANDSCAPE

SHOULDER ROCK:

1. 0.50 ft. minimum depth (1 1/4" minus) crushed rock. (Clark County Approved Material).
2. Compacted to 95% of maximum density. See trench zone.
3. Rock shall extend from E.O.P. to the back of trench at approx. .05 Ft./Ft. slope.

LAWN & LANDSCAPE AREAS:

1. A County approved top soil shall be placed 0.50 Ft. in depth.
2. Area to be restored to match existing.

TRENCH ZONE:

Where the distance from E.O.T. to E.O.P. is less than or equal to the depth of the trench; these conditions shall apply:

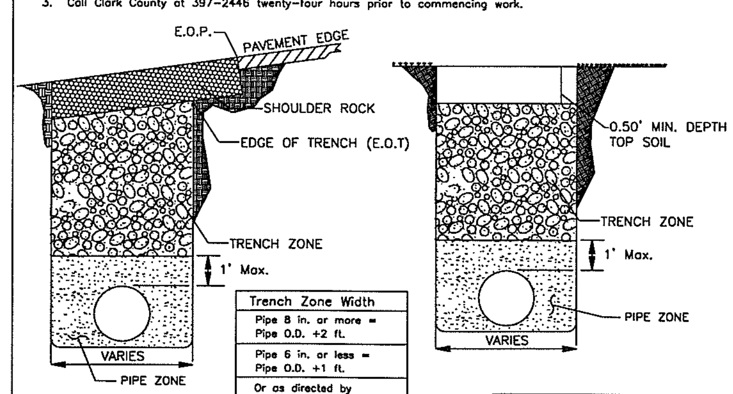
1. Granular backfill as approved by local agency or W.S.D.O.T. specifications for granular backfill. Compacted to 95% of maximum density in the trench zone using Method C compaction as per Section 2-03.3 (14)C.
2. Native material may be used if approved prior to construction.
3. Trench zone width -- see below.
4. Shoulder rock or landscaped sections as applicable.

PIPE ZONE:

1. Pipe zone material as specified by utility owner, and shall conform to section 9-03.12(3) WSDOT Specs.
2. 1.0 ft. max. from top of the pipe.

CONDITIONS:

1. A copy of the permit and requirements shall be on the job site at all times.
2. The permit holder shall be responsible for all restoration and maintence of ditches, shoulders, driveways, landscaping, ect.
3. Call Clark County at 397-2446 twenty-four hours prior to commencing work.



Trench Zone Width
Pipe 8 in. or more = Pipe O.D. +2 ft.
Pipe 6 in. or less = Pipe O.D. +1 ft.
Or as directed by the Engineer

NO.	REVISIONS	DATE	BY
1	NOTE, FIG #	05/02/01	DS
2	Pipe Zone Notes	10/07/02	SCH

DWG: U5.DWG

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ROADWAY SHOULDER INCLUDES LAWN & LANDSCAPE
APPROVED
COUNTY ENGINEER — 5/4/01 DATE

STANDARD U5 PLAN No.
DESIGNED · DRAWN · DATE 04/25/03

PRELIMINARY

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

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ROADWAY DETAILS

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CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
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SHEET X	OF

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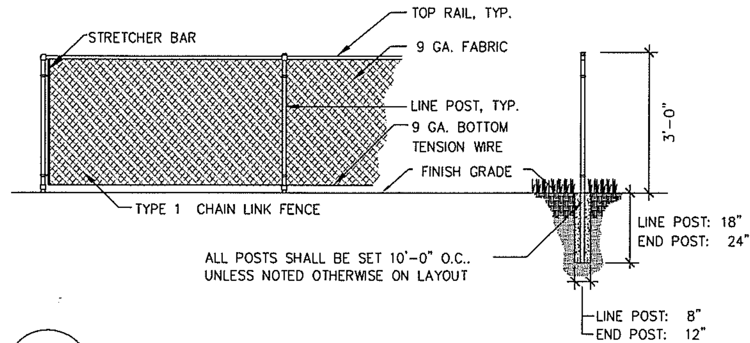
NOTES:

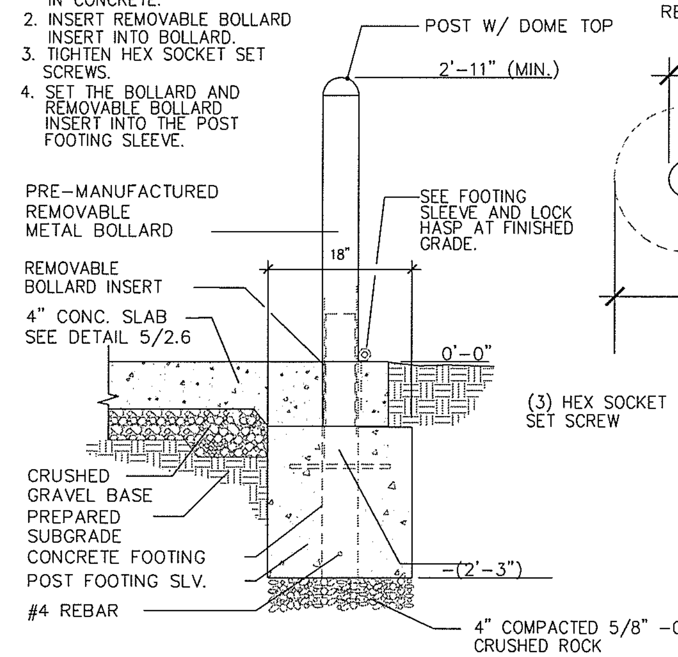
1. FABRIC SHALL BE 9-GAUGE STEEL WIRE WOVEN IN A 2" MESH WITH 1.2 OUNCE ZINC COATING, VINYL COATED
2. ALL METAL PARTS TO BE FULLY GALVANIZED.
3. BEND DOWN AND KNUCKLE TOP BARB SELVAGES OF FABRIC.
4. TERMINAL, CORNER, AND PULL POSTS SHALL CONSIST OF 2-3/8" O.D. SCHEDULE 40 PIPE, FULLY GALVANIZED AND VINYL COATED.
5. LINE POSTS SHALL CONSIST OF 1 7/8" (.065) O.D. PIPE, FULLY GALVANIZED AND VINYL COATED.
6. ALL TOP RAILS SHALL CONSIST OF 1 5/8" (.065) O.D. PIPE, FULLY GALVANIZED AND VINYL COATED.
7. INSTALL ALL FABRIC WITH POINTS DOWN. THE FINISHED EDGE OF THE FABRIC SHALL BE AT THE TOP OF THE FENCE.
8. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.



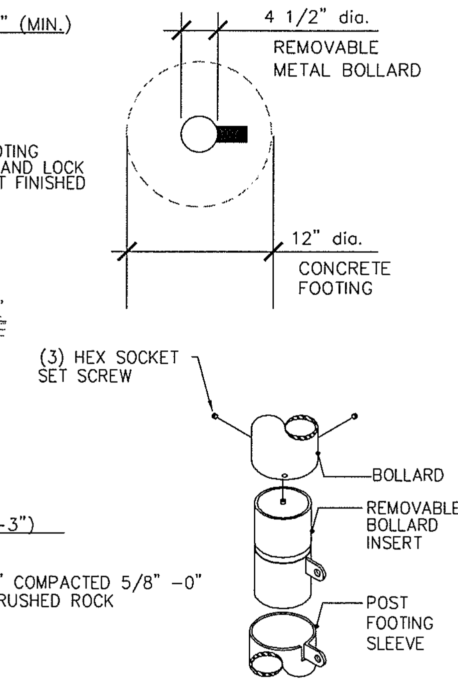
CHAIN LINK FENCE DETAIL

N.T.S.

INSTALLATION SEQUENCE
1. DIG FOOTING HOLE AND SET POST FOOTING SLEEVE PLUMB AND SQUARE IN CONCRETE.
2. INSERT REMOVABLE BOLLARD INSERT INTO BOLLARD.
3. TIGHTEN HEX SOCKET SET SCREWS.
4. SET THE BOLLARD AND REMOVABLE BOLLARD INSERT INTO THE POST FOOTING SLEEVE.



NOTE:
ELEVATIONS OF DOME TOP ON BOLLARDS SHALL REMAIN CONSTANT.



MANUFACTURER: COLUMBIA CASCADE COMPANY
(503) 223-1157

2/1.0 REMOVABLE BOLLARD IN CONCRETE SLAB DETAIL

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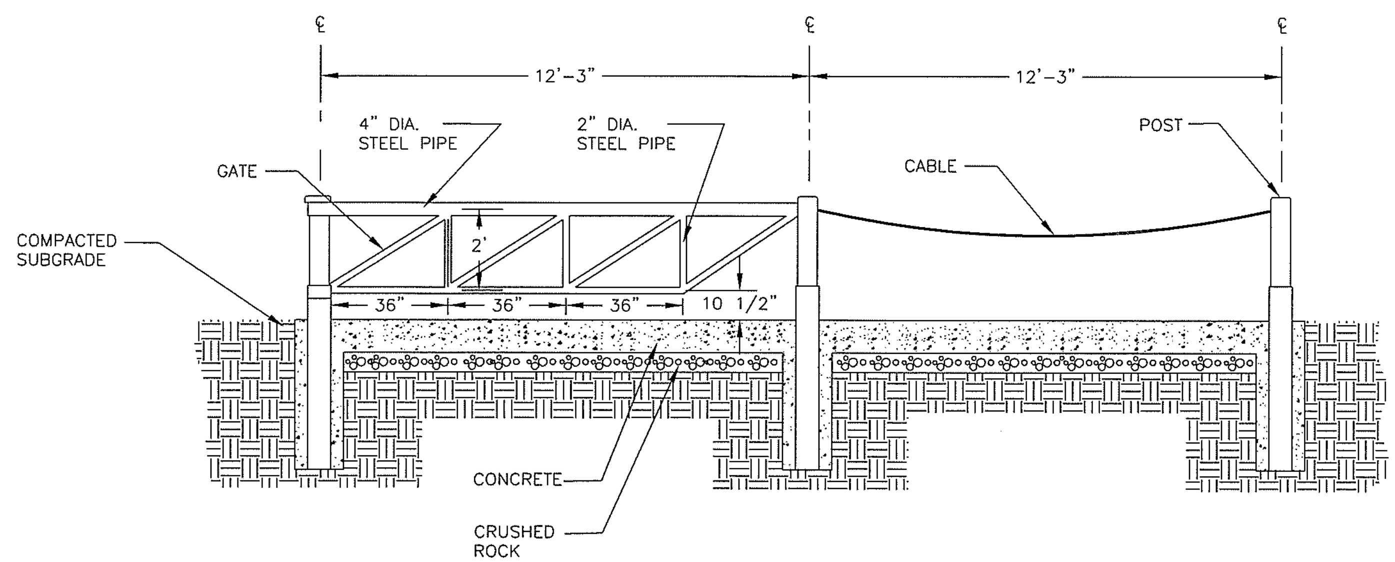

X/X GATE LAYOUT-SECTION ELEVATION

N.T.S.

PRELIMINARY

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
ROADWAY DETAILS

DESIGNED	RK
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CRP	331822
HOR.	NA
VERT.	NA
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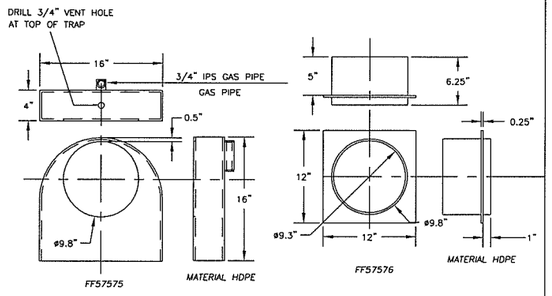

NO.	REVISIONS	DATE	BY

DWG: D2-1.DWG

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CLARK COUNTY
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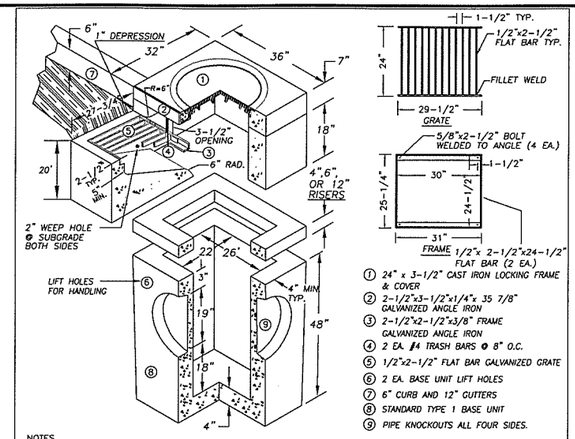
CATCH BASIN
OUTLET PIPE TRAP

APPROVED

Peter Capell
COUNTY ENGINEER

01/01/04
DATE

STANDARD
D2.1
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 09/23/02



1. 24" x 3-1/2" CAST IRON LOCKING FRAME & COVER
2. 2-1/2"x3-1/2"x1/4"x 35 7/8" GALVANIZED ANGLE IRON
3. 2-1/2"x2-1/2"x3/8" FRAME GALVANIZED ANGLE IRON
4. 2 EA. #4 TRASH BARS @ 8" O.C.
5. 1/2"x2-1/2" FLAT BAR GALVANIZED GRATE
6. 2 EA. BASE UNIT LIFT HOLES
7. 6" CURB AND 12" GUTTERS
8. STANDARD TYPE 1 BASE UNIT
9. PIPE KNOCKOUTS ALL FOUR SIDES.

NOTES

1. COMBINATION CURB INLET TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 & CB90 UNLESS SHOWN ON PLANS OR NOTED IN STANDARD SPECIFICATIONS.
2. REINFORCING FOR INLET UNIT, 3 EA. #4 HORZONTAL BARS; REINFORCING FOR TOP UNIT, 2 EA. #3 HORZONTAL BARS; REINFORCING FOR INLET SLOPED BASE, 4x4 MESH.
3. ALL REBAR TO MEET ASTM A615 GRADE 60.
4. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQAURE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497. WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
5. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4,000.
6 PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
7. KNOCKOUTS OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS INLET WALL THICKNESS.
8. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 17".
9. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
10. ANY PROTUDING ENDS OF PIPES SHALL BE TRIMMED FLUSH WITH THE INSIDE WALLS AND GROUTED TO THE SATISFACTION OF ENGINEER.
11. GRATE TO HAVE 1" DEPRESSION AT GUTTER INLET WITH GUTTER TO BE TAPERED DOWN TO INLET.
12. INSTALL REMOVABLE APWA TYPE 60A TRAP OR EQUAL. SEE STD. PLAN D2.1.
13. CONTRACTOR SHALL HAVE THE OPTION OF FURNISHING PRECAST OR CAST-IN-PLACE INLET STRUCTURES, UNLESS SPECIFIED.
14. SEE STD. PLAN 4.1 FOR BASIN GUTTER PAN DETAIL.

NO.	REVISIONS	DATE	BY

DWG: D3-0.DWG

Department of Public Works
CLARK COUNTY
WASHINGTON
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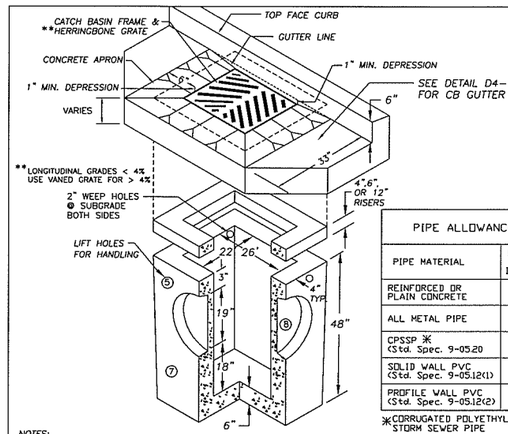
STANDARD TYPE 1
COMBINATION CURB INLET

APPROVED

Peter Capell
COUNTY ENGINEER

01/01/04
DATE

STANDARD
D3.0
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 09/09/02



PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	18"
ALL METAL PIPE	21"
CPSSP * (Std. Spec. 9-05.20	18"
SOLID WALL PVC (Std. Spec. 9-05.12(1)	21"
PROFILE WALL PVC (Std. Spec. 9-05.12(2)	21"

*CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES:

1. CURB INLET TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO) M 199) & C890 UNLESS SHOWN ON PLANS OR NOTED IN STANDARD SPECIFICATIONS.
2. REINFORCING FOR INLET UNIT, 3 EA. #4 HORIZONTAL BARS.
3. REINFORCING FOR TOP UNIT, 2 EA. #3 HORIZONTAL BARS.
4. ALL REBAR TO MEET ASTM A615 GRADE 60.
5. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497. WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
6. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4,000.
7. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
8. KNOCKOUTS OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS INLET WALL THICKNESS.
9. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 20".
10. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
11. ANY PROTRUDING ENDS OF PIPES SHALL BE TRIMMED FLUSH WITH THE INSIDE WALLS AND GROUTED TO THE SATISFACTION OF ENGINEER.
12. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH WDOT STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
13. FRAME MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
14 INSTALL REMOVABLE APWA TYPE 60A TRAP OR EQUAL, SEE STD. PLAN D2.1.
15. CONTRACTOR SHALL HAVE THE OPTION OF FURNISHING PRECAST OR CAST-IN-PLACE INLET STRUCTURES, UNLESS SPECIFIED.

NO.	REVISIONS	DATE	BY

DWG: D4-0.DWG

Department of Public Works
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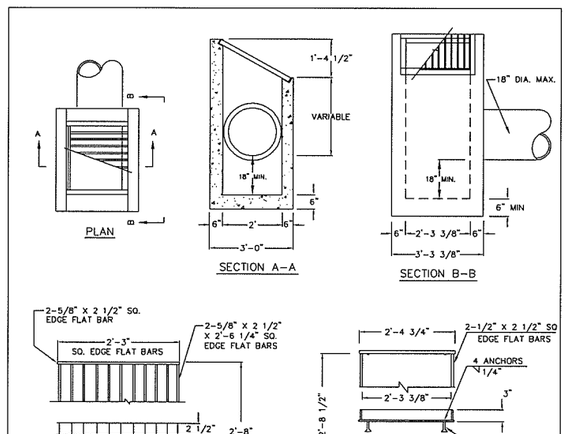
STANDARD CATCH BASIN
TYPE 1

APPROVED

Peter Capell
COUNTY ENGINEER

01/01/04
DATE

STANDARD
D4.0
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 07/07/03



NOTES:

1. DITCH INLET CONSTRUCTION IN ACCORDANCE WITH ASTM C-478
2. CATCH BASIN, FRAME, AND GRATES SHALL BE FLAT BAR STEEL OR APPROVED EQUAL.
3. INSIDE FRAME DIMENSIONS: 2'-3 3/8"x 2'-8 1/2"".
4. 3/8" CROSS BARS SHALL BE FLUSH WITH THE GRATE SURFACE AND MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS.

NO.	REVISIONS	DATE	BY

DWG: D6.DWG

Department of Public Works
CLARK COUNTY
WASHINGTON
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DITCH INLET

APPROVED

Peter Capell
COUNTY ENGINEER

01/01/04
DATE

STANDARD
D6
PLAN No.
DESIGNED SCH
DRAWN SCH
DATE 09/17/02

PRELIMINARY

DESIGNED	RK
DRAWN	BAK
CRP	331822
HOR.	NA
VERT.	NA
DATE	5/26/04
DWG:	DD1
SHEET	OF

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THOMAS D. GRANCE
STATE OF WASHINGTON
32068
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: JANUARY 20, 2005

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
DRAINAGE DETAILS 1

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WASHINGTON

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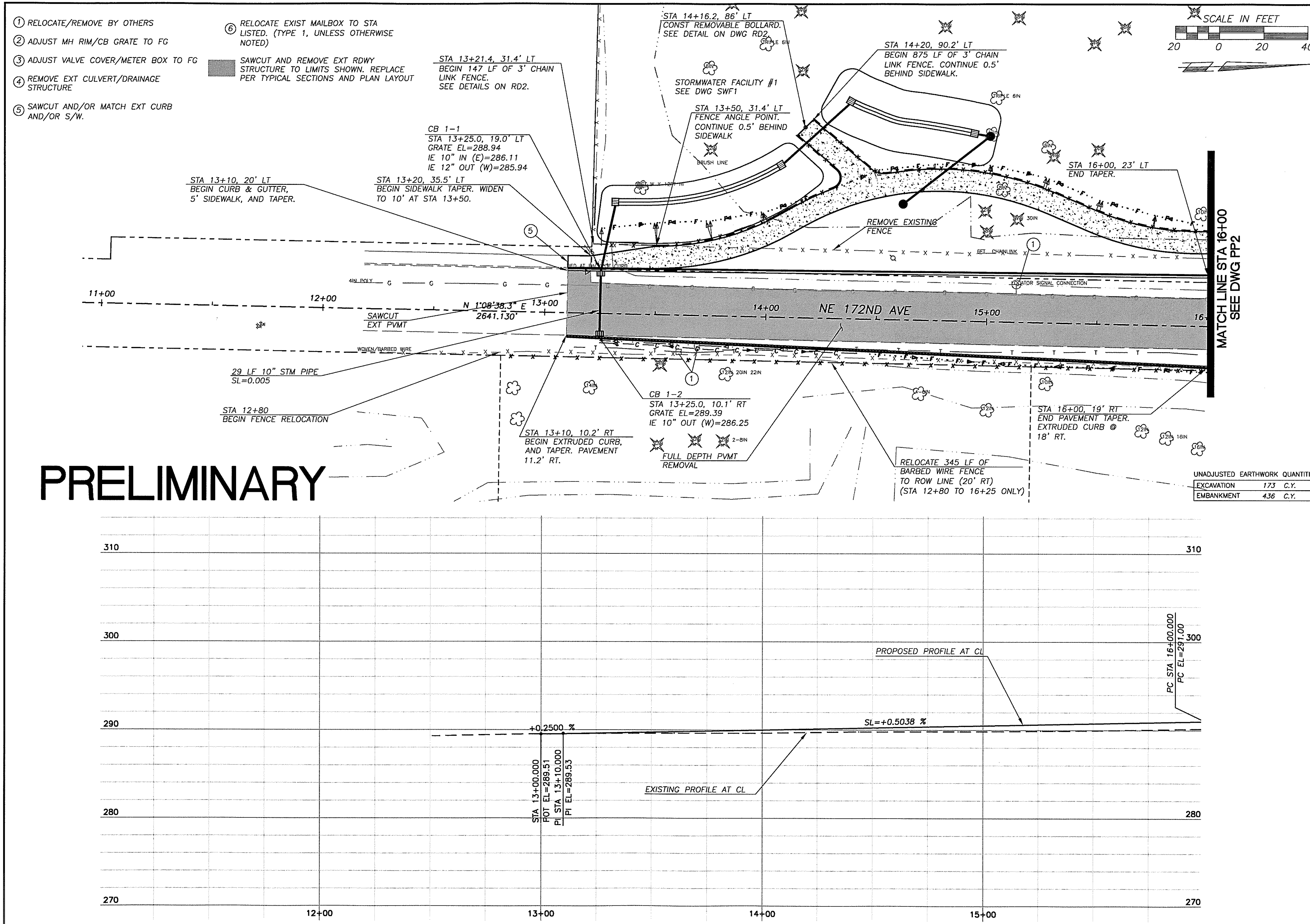

(1) RELOCATE/REMOVE BY OTHERS
(2) ADJUST MH RIM/CB GRATE TO FG
(3) ADJUST VALVE COVER/METER BOX TO FG
(4) REMOVE EXT CULVERT/DRAINAGE STRUCTURE
(5) SAWCUT AND/OR MATCH EXT CURB AND/OR S/W.
(6) RELOCATE EXIST MAILBOX TO STA LISTED. (TYPE 1, UNLESS OTHERWISE NOTED)
SAWCUT AND REMOVE EXT RDWY STRUCTURE TO LIMITS SHOWN. REPLACE PER TYPICAL SECTIONS AND PLAN LAYOUT
STA 13+21.4, 31.4' LT BEGIN 147 LF OF 3' CHAIN LINK FENCE. SEE DETAILS ON RD2.
STA 14+16.2, 86' LT CONST REMOVABLE BOLLARD. SEE DETAIL ON DWG RD2.
STORMWATER FACILITY #1 SEE DWG SWF1
STA 14+20, 90.2' LT BEGIN 875 LF OF 3' CHAIN LINK FENCE. CONTINUE 0.5' BEHIND SIDEWALK.
SCALE IN FEET
20 0 20 40
CB 1-1 STA 13+25.0, 19.0' LT GRATE EL=288.94 IE 10" IN (E)=286.11 IE 12" OUT (W)=285.94
STA 13+50, 31.4' LT FENCE ANGLE POINT. CONTINUE 0.5' BEHIND SIDEWALK
STA 13+10, 20' LT BEGIN CURB & GUTTER, 5' SIDEWALK, AND TAPER.
STA 13+20, 35.5' LT BEGIN SIDEWALK TAPER. WIDEN TO 10' AT STA 13+50.
STA 16+00, 23' LT END TAPER.
REMOVE EXISTING FENCE
6FT CHAINLINK
LOCATOR SIGNAL CONNECTION
MATCH LINE STA 16+00 SEE DWG PP2
4IN POLY
11+00
12+00
13+00
14+00
15+00
N 1°08'38.3" E 2641.130'
NE 172ND AVE
SAWCUT EXT PVMT
WOVEN/BARBED WIRE
29 LF 10" STM PIPE SL=0.005
STA 12+80 BEGIN FENCE RELOCATION
CB 1-2 STA 13+25.0, 10.1' RT GRATE EL=289.39 IE 10" OUT (W)=286.25
STA 13+10, 10.2' RT BEGIN EXTRUDED CURB, AND TAPER. PAVEMENT 11.2' RT.
FULL DEPTH PVMT REMOVAL
RELOCATE 345 LF OF BARBED WIRE FENCE TO ROW LINE (20' RT) (STA 12+80 TO 16+25 ONLY)
STA 16+00, 19' RT END PAVEMENT TAPER. EXTRUDED CURB @ 18' RT.
PRELIMINARY
310
300
290
280
270
PROPOSED PROFILE AT CL
PC STA 16+00.000
PC EL=291.00
+0.2500 %
SL=+0.5038 %
STA 13+00.000
POT EL=289.51
PI STA 13+10.000
PI EL=289.53
EXISTING PROFILE AT CL

UNADJUSTED EARTHWORK QUANTITIES

EXCAVATION	173	C.Y.
EMBANKMENT	436	C.Y.

DESIGNED	BK
DRAWN	RK
CRP	331822
HOR.	1"=20'
VERT.	1"=5'
DATE	5/26/04
DWG:	PP1
SHEET	OF

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BRUCE A. KLUG, STATE OF WASHINGTON, 39888 REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
PLAN & PROFILE STA BOP TO 16+00

CLARK COUNTY WASHINGTON
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(1) RELOCATE/REMOVE BY OTHERS

(2) ADJUST MH RIM/CB GRATE TO FG

(3) ADJUST VALVE COVER/METER BOX TO FG

(4) REMOVE EXT CULVERT/DRAINAGE STRUCTURE

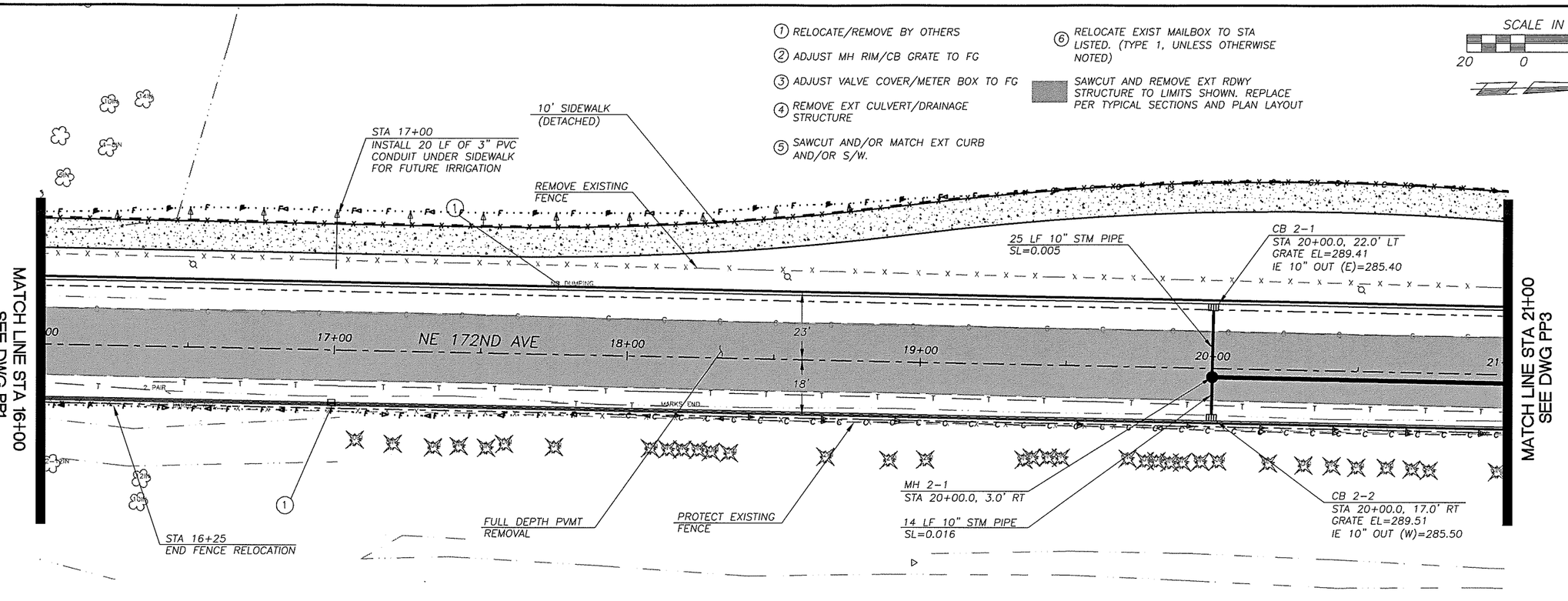
(5) SAWCUT AND/OR MATCH EXT CURB AND/OR S/W.

(6) RELOCATE EXIST MAILBOX TO STA LISTED. (TYPE 1, UNLESS OTHERWISE NOTED)

SAWCUT AND REMOVE EXT RDWY STRUCTURE TO LIMITS SHOWN. REPLACE PER TYPICAL SECTIONS AND PLAN LAYOUT

SCALE IN FEET

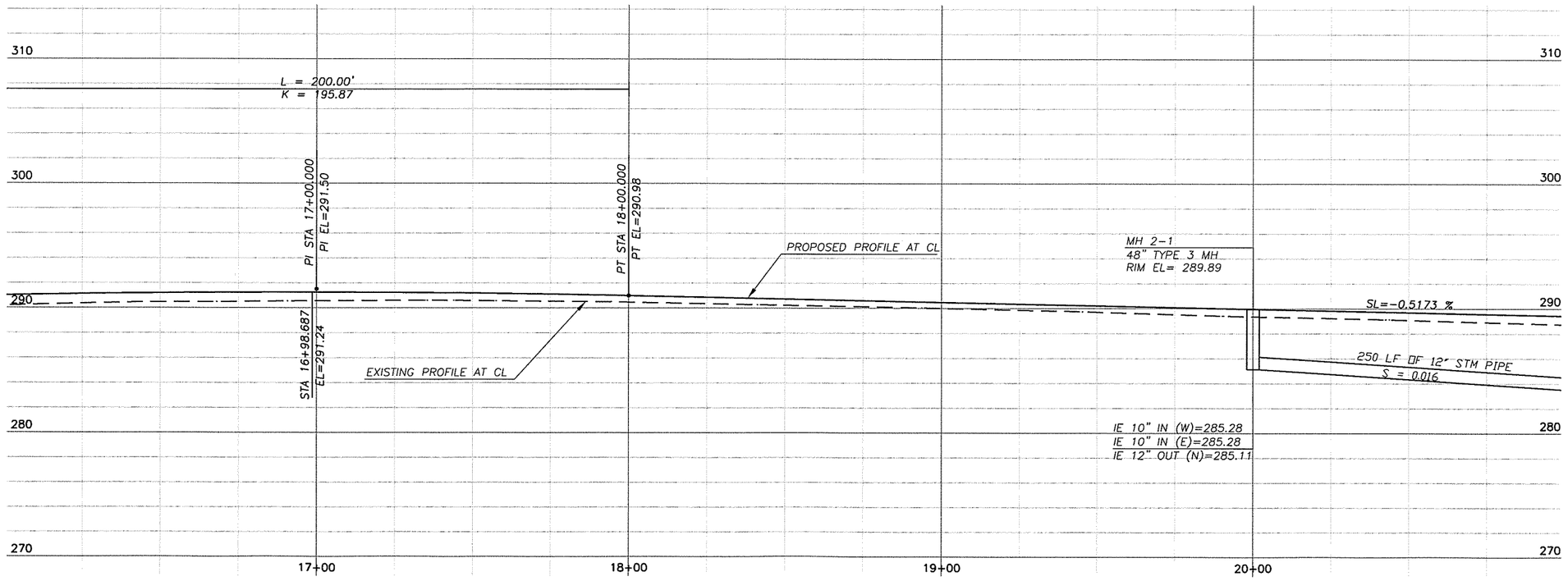
20 0 20 40



PRELIMINARY

UNADJUSTED EARTHWORK QUANTITIES

EXCAVATION	227	C.Y.
EMBANKMENT	500	C.Y.



DESIGNED BK
DRAWN RK
CRP 331822
HOR. 1"=20'
VERT. 1"=5'
DATE 5/26/04
DWG: PP2
SHEET OF

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STATE OF WASHINGTON 35886 REGISTERED PROFESSIONAL ENGINEER
EXPIRES APRIL 7, 2005

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
PLAN & PROFILE STA 16+00 TO 21+00

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CLARK COUNTY WASHINGTON

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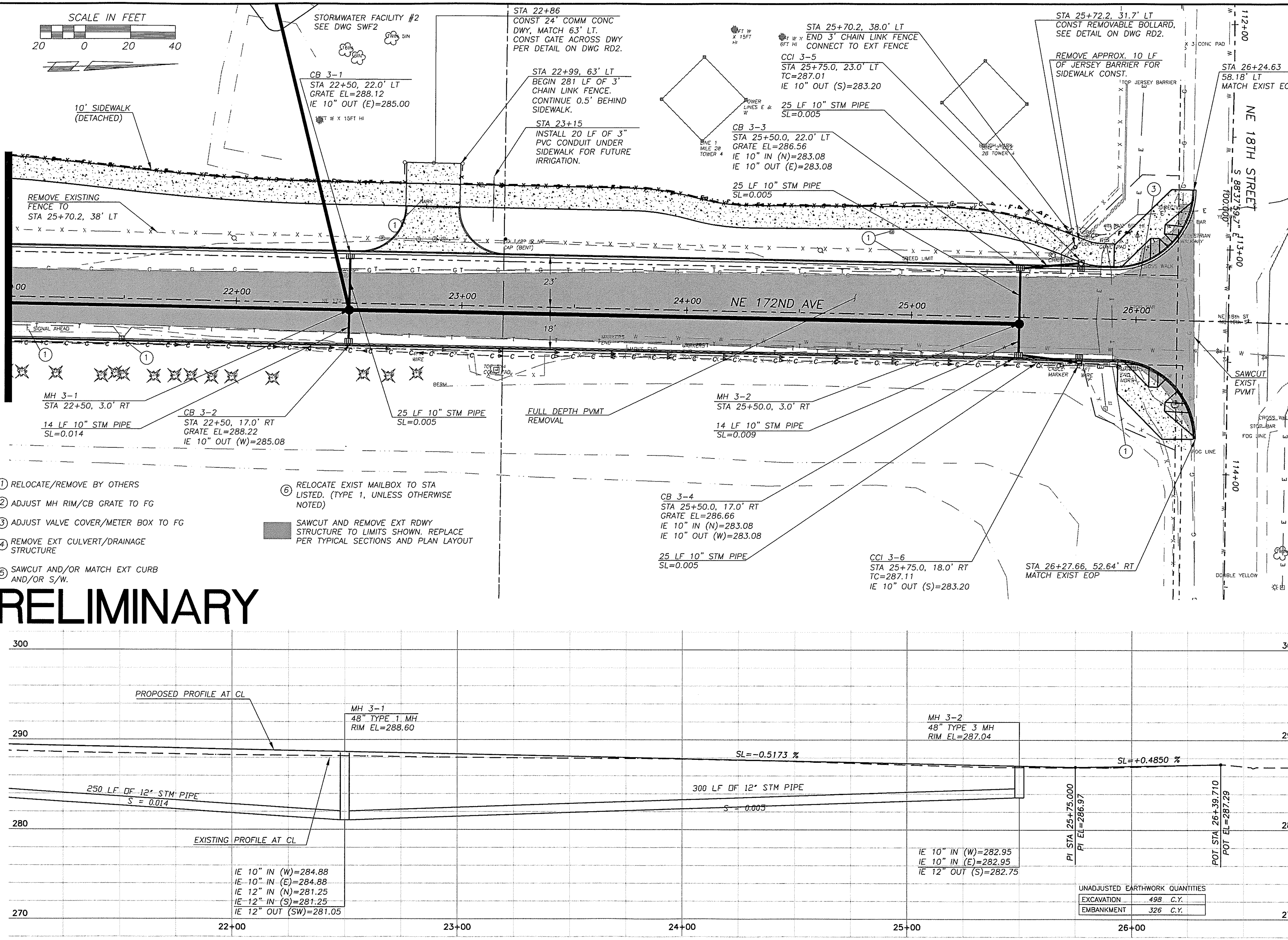
SCALE IN FEET
20 0 20 40
STORMWATER FACILITY #2
SEE DWG SWF2
MATCH LINE STA 21+00
SEE DWG PP2
CB 3-1
STA 22+50, 22.0' LT
GRATE EL=288.12
IE 10" OUT (E)=285.00
STA 22+86
CONST 24' COMM CONC DWY, MATCH 63' LT.
CONST GATE ACROSS DWY PER DETAIL ON DWG RD2.
STA 22+99, 63' LT
BEGIN 281 LF OF 3' CHAIN LINK FENCE.
CONTINUE 0.5' BEHIND SIDEWALK.
STA 23+15
INSTALL 20 LF OF 3" PVC CONDUIT UNDER SIDEWALK FOR FUTURE IRRIGATION.
10' SIDEWALK (DETACHED)
REMOVE EXISTING FENCE TO STA 25+70.2, 38' LT
STA 25+70.2, 38.0' LT
END 3' CHAIN LINK FENCE
CONNECT TO EXT FENCE
CCI 3-5
STA 25+75.0, 23.0' LT
TC=287.01
IE 10" OUT (S)=283.20
25 LF 10" STM PIPE
SL=0.005
CB 3-3
STA 25+50.0, 22.0' LT
GRATE EL=286.56
IE 10" IN (N)=283.08
IE 10" OUT (E)=283.08
25 LF 10" STM PIPE
SL=0.005
STA 25+72.2, 31.7' LT
CONST REMOVABLE BOLLARD, SEE DETAIL ON DWG RD2.
REMOVE APPROX. 10 LF OF JERSEY BARRIER FOR SIDEWALK CONST.
STA 26+24.63
58.18' LT
MATCH EXIST EOP
NE 18TH STREET
S 88°37'59.7" E
100.000'
112+00
113+00
114+00
22+00
23+00
24+00
25+00
26+00
NE 172ND AVE
23'
18'
SAWCUT EXIST PVMT
MH 3-1
STA 22+50, 3.0' RT
14 LF 10" STM PIPE
SL=0.014
CB 3-2
STA 22+50, 17.0' RT
GRATE EL=288.22
IE 10" OUT (W)=285.08
25 LF 10" STM PIPE
SL=0.005
FULL DEPTH PVMT REMOVAL
MH 3-2
STA 25+50.0, 3.0' RT
14 LF 10" STM PIPE
SL=0.009
CB 3-4
STA 25+50.0, 17.0' RT
GRATE EL=286.66
IE 10" IN (N)=283.08
IE 10" OUT (W)=283.08
25 LF 10" STM PIPE
SL=0.005
CCI 3-6
STA 25+75.0, 18.0' RT
TC=287.11
IE 10" OUT (S)=283.20
STA 26+27.66, 52.64' RT
MATCH EXIST EOP
(1) RELOCATE/REMOVE BY OTHERS
(2) ADJUST MH RIM/CB GRATE TO FG
(3) ADJUST VALVE COVER/METER BOX TO FG
(4) REMOVE EXT CULVERT/DRAINAGE STRUCTURE
(5) SAWCUT AND/OR MATCH EXT CURB AND/OR S/W.
(6) RELOCATE EXIST MAILBOX TO STA LISTED. (TYPE 1, UNLESS OTHERWISE NOTED)
SAWCUT AND REMOVE EXT RDWY STRUCTURE TO LIMITS SHOWN. REPLACE PER TYPICAL SECTIONS AND PLAN LAYOUT
PRELIMINARY
300
290
280
270
PROPOSED PROFILE AT CL
EXISTING PROFILE AT CL
MH 3-1
48" TYPE 1 MH
RIM EL=288.60
250 LF OF 12" STM PIPE
S = 0.014
IE 10" IN (W)=284.88
IE 10" IN (E)=284.88
IE 12" IN (N)=281.25
IE 12" IN (S)=281.25
IE 12" OUT (SW)=281.05
SL=-0.5173 %
300 LF OF 12" STM PIPE
S = 0.005
MH 3-2
48" TYPE 3 MH
RIM EL=287.04
IE 10" IN (W)=282.95
IE 10" IN (E)=282.95
IE 12" OUT (S)=282.75
SL=+0.4850 %
PI STA 25+75.000
PI EL=286.97
POT STA 26+39.710
POT EL=287.29

UNADJUSTED EARTHWORK QUANTITIES

EXCAVATION	498 C.Y.
EMBANKMENT	326 C.Y.

DESIGNED	BK
DRAWN	RK
CRP	331822
HOR.	1"=20'
VERT.	1"=5'
DATE	5/26/04
DWG:	PP3
SHEET	OF

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STATE OF WASHINGTON
BRUCE A. KLUG
39868
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
PLAN & PROFILE STA 21+00 TO E.O.P.

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WASHINGTON
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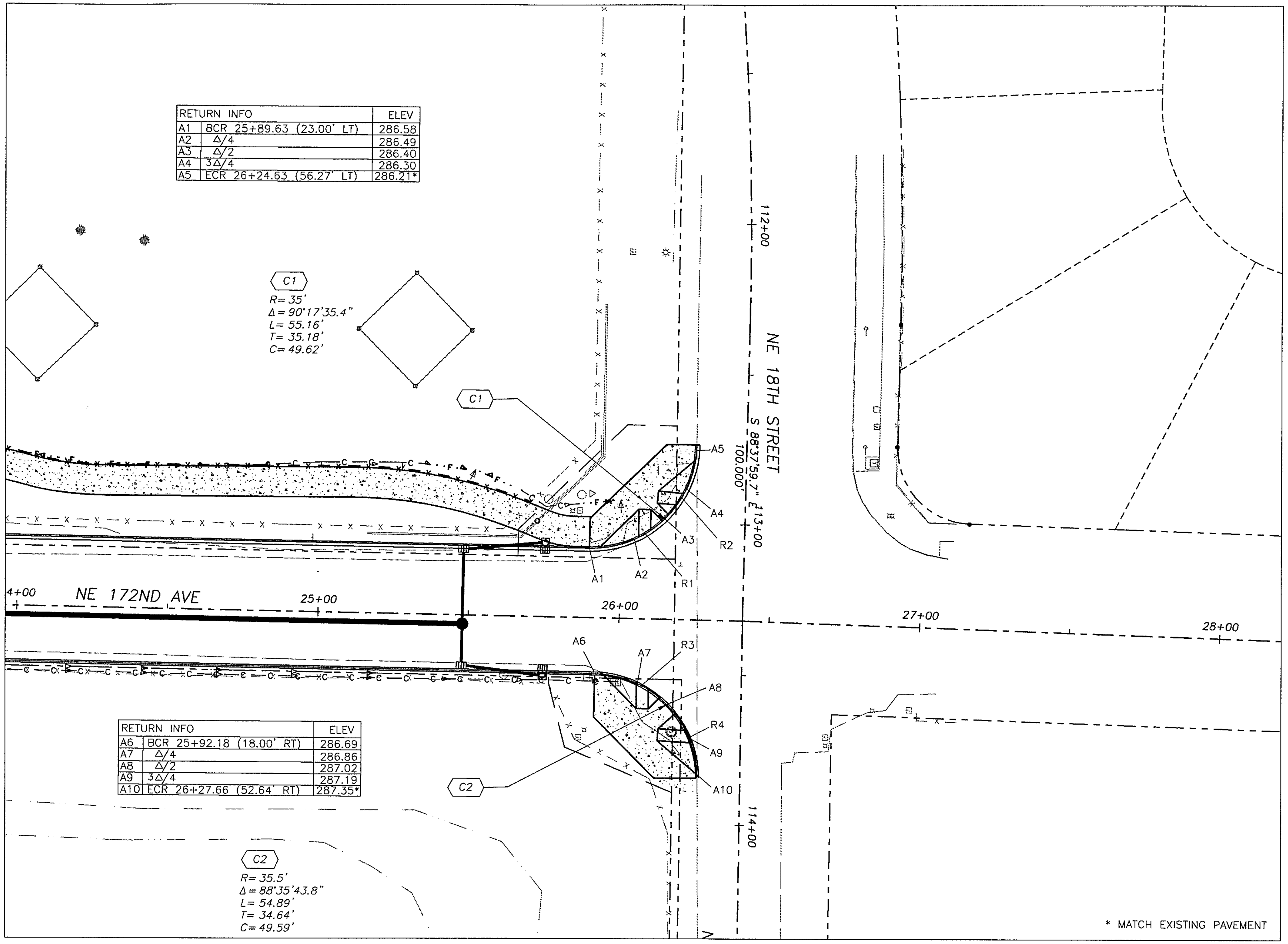

RETURN INFO		ELEV
A1	BCR 25+89.63 (23.00' LT)	286.58
A2	Δ/4	286.49
A3	Δ/2	286.40
A4	3Δ/4	286.30
A5	ECR 26+24.63 (56.27' LT)	286.21*

RETURN INFO		ELEV
A6	BCR 25+92.18 (18.00' RT)	286.69
A7	Δ/4	286.86
A8	Δ/2	287.02
A9	3Δ/4	287.19
A10	ECR 26+27.66 (52.64' RT)	287.35*

CL OF RAMPS @ FACE

#	STATION	OFFSET	TYPE
R1	26+07.7	28.0 LT	2
R2	26+19.9	40.5 LT	2
R3	26+08.3	21.9 RT	2
R4	26+24.5	33.9 RT	2

SCALE IN FEET

20 0 20 40

PRELIMINARY

DESIGNED BAK
DRAWN RK
CRP 331822
HOR. 20
VERT. NA
DATE 5/26/04
DWG: I01
SHEET X OF X

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BRUCE A. KLUG
STATE OF WASHINGTON
39868
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
INTERSECTION PLAN

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PRELIMINARY

SCALE IN FEET
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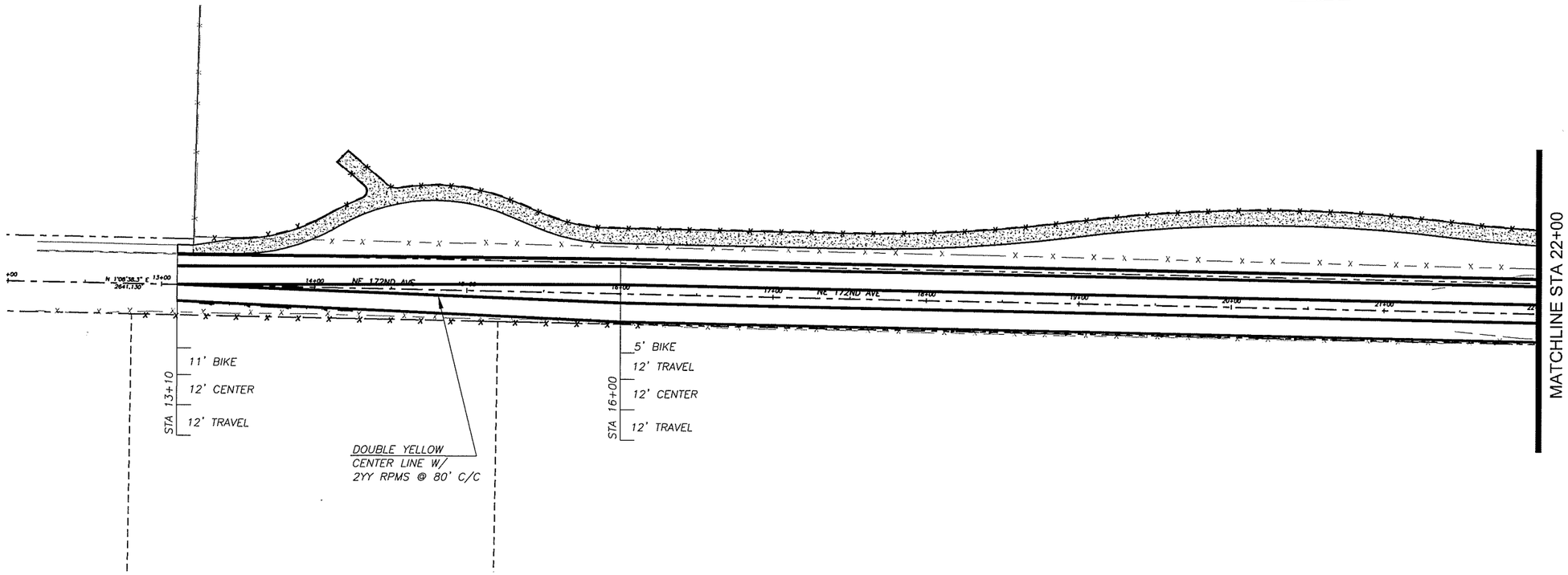

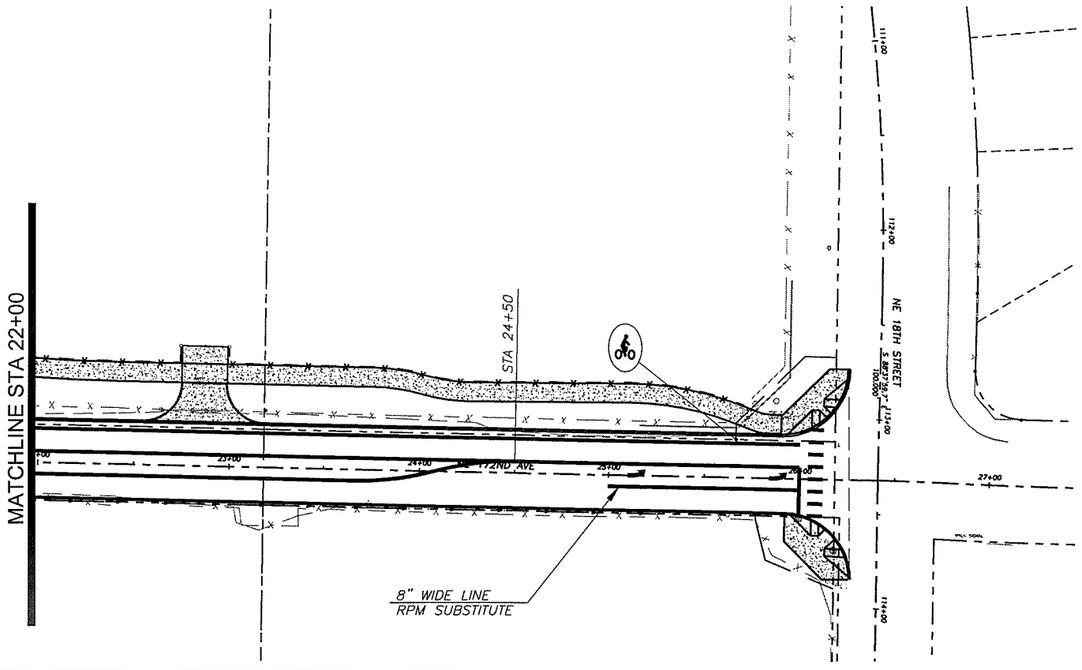

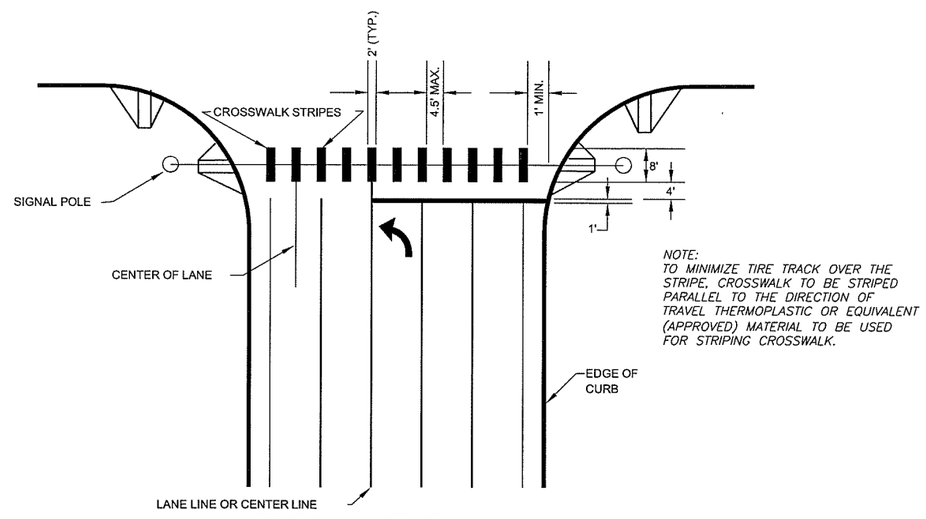

CROSSWALK STRIPE DETAILS

NOTE:
TO MINIMIZE TIRE TRACK OVER THE STRIPE, CROSSWALK TO BE STRIPED PARALLEL TO THE DIRECTION OF TRAVEL THERMOPLASTIC OR EQUIVALENT (APPROVED) MATERIAL TO BE USED FOR STRIPING CROSSWALK.

DESIGNED	BAK
DRAWN	RK
CRP	331822
HOR.	1"=40'
VERT.	NA
DATE	5/26/04
DWG:	SS1
SHEET X	OF X

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EXPIRES APRIL 7, 2006

DESIGN & ENGINEERING DIVISION
DESIGN SECTION

NE 172ND AVENUE
SIGNING AND STRIPING

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